



INSTITUTE FOR SOUTHEAST ASIAN ARCHAEOLOGY (ISEAA) NEWSLETTER

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Monograph Publication Update

ISEAA has some big news to share! In the past thirteen months we have published the first three of four volumes of our metals monograph through the University of Pennsylvania Press! Volume 2A, titled *Background to the Metal Remains*, was published in October 2018, and volume 2B, titled *Metals and Related Evidence from Ban Chiang, Ban Tong, Ban Phak Top, and Don Klang*, was published in February 2019. Now, volume 2C, titled *The Metal Remains in Regional Context*, is out in November 2019. Contributing authors include Joyce White, Elizabeth Hamilton, Vincent Pigott, William Vernon, Oli Pryce, and Samuel Nash.

Most of our followers will know that these books represent decades of work. Dr. Elizabeth Hamilton in particular has led this research program for many years.

This work could not have been undertaken without your support! Thank you to everyone who contributed over the many years! All work since 2013 has been funded by individual donations to ISEAA. As you may recall from previous newsletters, the manuscript we handed over to Museum Publications in November 2016 was more than 1,000 pages, not counting figures. After peer review, it was decided that our manuscript would be published in four separate volumes. We are incredibly grateful for your contributions that have brought us to this place.

In addition to the volumes, the first review of Volume 2A has been published in *Antiquity* (vol. 93 no. 371). David Allen Warburton states, “This volume is exceptional as the theses advanced are critically examined, logically presented and evidence-driven... the theoretical significance goes far beyond this specific field [of Southeast Asian archaeometal-

lurgy].” As we have aimed to produce publications that contribute to the discipline of archaeology beyond merely Southeast Asia, and to bring the fascinating ancient past of Thailand and Southeast Asia to the attention of archaeological scholars around the globe, we are really gratified by Warburton’s recognition.

The publication of the Ban Chiang metals monograph suite is well-timed for the upcoming international archaeometallurgy conference in Bangkok in September 2020. At this conference, called BUMA X for the 10th meeting of the Beginnings of the Use of Metals and Alloys, Joyce White plans to present findings from the Ban Chiang metals study at a session on Southeast Asian archaeometallurgy. By then, the fourth Ban Chiang metals volume will have been published! The conference will also include a special session celebrating the contributions of Professor Vincent Pigott and Associate Professor



Left: Cover of volume 2B. Right: Elizabeth Hamilton, Ardeth Anderson, Joyce White, and Page Selinsky toast the final submission of volume 2C.

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Surapol Natapintu to the Southeast Asian archaeological community, and Joyce will contribute a paper to that as well. These two scholars pioneered the introduction of modern archaeometallurgical research to Thailand and Southeast Asia. BUMA X will be a fitting culmination to the decades-long task of bringing the research of Ban Chiang's ancient metallurgy to the top tier of archaeometallurgical scholars.

ISEAA was founded with a primary goal of continuing publication of Penn Museum's research in Thailand and Laos. Thus, we plan next to turn our efforts to new publications from our research in northern Laos and the next suite of monographs on the Ban Chiang excavations.



Joyce C. White, Ph.D.

Executive Director

Institute for Southeast Asian Archaeology

Survey near Thakhek

In November and December of 2018, Drs. Joyce White and Elizabeth Hamilton joined with Dr. Peter Cobb, then a digital archaeology specialist in the Museum's Center for the Analysis of Archaeological Materials (CAAM) and now at the University of Hong Kong, and Jared Koller, a researcher at the Smithsonian Institution's Asian Cultural Heritage Program, for a field season in Laos. Along with Lao colleagues and ceramics specialist Naho Shimizu, they conducted a survey of an abandoned historic-period city along the Mekong south of Thakhek, Laos. The Asian Development Bank provided funding through a program to enhance tourism facilities at the renowned nearby site of Vat Sikhottabong, a major Buddhist temple and place of pilgrimage.

There were two field mapping goals: to collect data for a 3D digital map of the temple complex at Vat Sikhottabong and to document the extent of the surrounding abandoned historic city. To accomplish

these goals in 3 weeks, they tested new technologies, including drone 3D modeling and a special phone app designed to rapidly document and map above-ground features.

During phase 1, White and the Lao team found remnants of an abandoned old city in the forests, fields, and gardens surrounding Vat Sikhottabong. This deserted city has received almost no study by scholars! The rapid ground survey team worked with local cultural heritage managers, who were familiar with collapsed stupas, sculptures, brick mounds, walls, and platforms in the Thakhek area. Using a smart phone with an app configured to record GPS coordinates and link them to photographs, in a week the team documented more than 140 above-ground features.

The data recorded in this quick survey provided the evidence to create a map showing the location and extent of the old city. The team also collected potsherds from exposed surfaces to quickly estimate the age of the city and the extent of its international trade connections. Naho Shimizu, an independent researcher specializing in Asian trade ceramics and PhD candidate

at Waseda University, Japan, analyzed the sherds and revealed that they date to between the fourteenth and the eighteenth centuries AD, and some originated as far away as Japan.

To map the temple complex, the survey team led by Cobb and Koller used drones and an Emlid Reach GNSS (Global Navigation Satellite System) to precisely locate points in the main temple compound. The drone data was used to create a 3D map of the temple compound itself. Photogrammetry software processed the location of millions of points on the ground by comparing and integrating the photographs taken by the drone, enabling the construction of a 3D model of the site's surface with a photographic texture.

The two maps and the ceramic evidence were combined with historical research to create content for 13 panels for an exhibition at the newly built visitor center at Vat Sikhottabong. The evidence indicates that the city was occupied during the classic Lao period of Lanxang, and was destroyed probably by Thai forces at about 1828 AD. The exhibit is expected to be installed in early 2020.



Peter Cobb directs Lao team in use of GNSS. Elizabeth Hamilton and Bounheuang Bouasisengpaseuth are to the right.

Losses in the greater Ban Chiang and TAP family

In the past couple of years, several individuals who made seminal and lasting contributions in one way or another (several even dating from the 1970s!) to Penn Museum (Ban Chiang and the Thailand Archaeometallurgy Project or TAP) and ISEAA research in Thailand and Laos have passed away. We celebrate their lives and gifts to our work with brief remembrances.



John V. Hastings III

John Hastings passed away in Orinda, CA on May 9, 2017 at the age of 92. After receiving a degree in Electrical Engineering from Cornell University, he became president of the gold leaf manufacturing firm Hastings & Co. John began his association with the Penn Museum's Ban Chiang Project by 1978 as a volunteer, beginning with coding amorphous metal artifacts back in the days of 80 column punch cards. He became deeply engaged in the digital and computer dimensions of the project, including the critical migration of the data from mainframe to desktop computers in the 1980s and 1990s. He became a primary benefactor, underwriting two archaeology challenge funding efforts for Ban Chiang. He later became the chair of the advisory board for the new Institute for Southeast Asian Archaeology (ISEAA). His nearly 4 de-

acades of encouragement, involvement, and support are so deeply appreciated by the "Ban Chiang Gang." His legacy lives on as the Ban Chiang data originally recorded in the late 1970s, which he "saved," still form the core of our digital data today.



Tamara Stech

Tamara Stech died in Philadelphia, PA on May 12, 2016 at the age of 70. She held a Ph.D. in Near Eastern and Classical Archaeology from Bryn Mawr College, having spent several seasons excavating in Turkey. Later at Bryn Mawr she joined its senior staff as Secretary of the College (1992-95). In the field of archaeology, she is best known for founding and editing (1987-1992) the pioneering archaeological science journal *Archeomaterials*. This endeavor stemmed from her partnership beginning in 1973 with Penn Professors Robert Maddin (see below) and James D. Muhly, both of whose early and formative contributions in archaeometallurgy are inestimable. This team received the "14th Pomerance Award for Scientific Contributions to Archaeology" from the Archaeological Institute of America in 1994. Between 1973 and 1984, with major funding from the National Science Foundation and the National Endowment for the Humanities, the team undertook studies of the metals from sites in Cyprus, Sardinia, Egypt, Israel, Anatolia, the Aegean, and Thailand. Their publications integrated chemical and metallurgical analyses with archaeological and historical data. Prior to their partnership,

ancient metallurgy had been largely confined to the study of 'belles pieces' in art museums. In 1976, during this seminal period in archaeometallurgical research, Tamara and Bob Maddin co-authored "The Techniques of the Thai Metal-smith" in the Penn Museum's journal *Expedition*. It is one of the first detailed discussions of prehistoric copper/bronze metallurgy in Thailand/Southeast Asia and focused specifically on the metal artifacts excavated by Chet Gorman and Pisit Charoenwongsa in 1974 and 1975 at Ban Chiang. The article remains a milestone to this day.



Robert "Bob" Maddin

Bob Maddin passed away in Arlington, VA on March 3, 2019 at the age of 100. He held a Ph.D. in Engineering (Physical Metallurgy) from Yale (1948) and later (1955) he came to Penn as Professor of Metallurgy and Director of the School of Metallurgical Engineering, a position he held until 1972. In 1960 he was one of the founders of Penn's Laboratory for the Research on the Structure of Matter (LRSM). In 1973 he was appointed University Professor, a position he held until his retirement in 1983. Although he "retired" in 1984, Bob actually assumed Honorary Directorship of the Center for Archaeological Research and Development at Harvard University from 1985 through 1987, followed by a Humboldt Fellowship to study Roman mining technology in Germany. In 1972 he teamed up with Penn Professor of Ancient History James D. Muhly and shortly

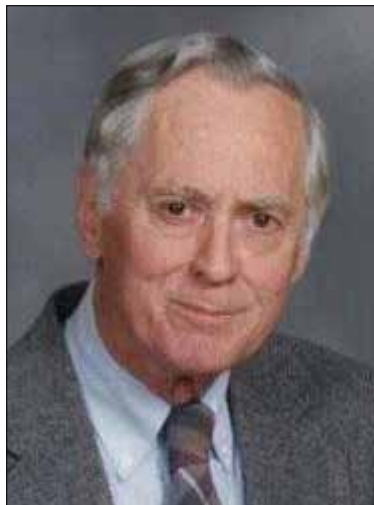
thereafter with Dr. Tamara Stech, a Near Eastern archaeologist, and together their team made significant contributions to the emerging field of archaeometallurgy (see Stech note above). His 1976 study with Tamara Stech of the Ban Chiang metals shortly after they were excavated established a baseline of scholarship into the early metallurgy of Thailand. Finally, in 1981, Bob, along with Chinese Professor Tsun Ko, founded the BUMA (“Beginnings of the Use of Metals and Alloys”) meetings. From the second meeting of this conference, held in Zhengzhou, China, he edited a classic volume on early metallurgy (*The Beginnings of the Use of Metals and Alloys*, 1988), which included contributions from both Joyce White and Vincent Pigott along with many other top scholars studying archaeometallurgy. Fittingly, the tenth convention of BUMA will be held in Bangkok, Thailand in September 2020.



Andrew “Andy” D. Weiss

Andy Weiss died in Olympia, WA in May 2019 at the age of 60. He started with the Ban Chiang Project working for Professor Chet Gorman as a high school volunteer in the mid-1970s before attending the University of Pennsylvania, graduating in 1980 with a BS in Engineering/Applied Science. This training served him well over his long career as a top-notch GIS (Geographic Information Systems) specialist, much of it focused on conservation biology. Over the years he also maintained a deep interest in archaeology,

which led to his employment in the Penn Museum’s MASCA (Museum Applied Science Center for Archaeology) in 1985-1992. There he founded its “Apple Orchard” computer lab and created the pioneering COMPASS total station archaeological site surveying program that went on to be widely used in Museum projects carried out worldwide. Andy’s connections to the Penn Museum allowed him to dig all over the world, including Honduras, Egypt, Syria, Turkey, and the Philippines. It was during this time that he made his first visit to Thailand and fell in love with the country. As a result, Andy played a formative role, with Vincent Pigott and Surapol Natapintu, in the creation of the Museum’s Thailand Archaeometallurgy Project (TAP), and he served as its Field Director between 1986-1994 and as a senior excavator at the site of Nil Kham Haeng. Most recently, using his in-depth knowledge of TAP site archaeology and his superb quantitative skills, he was the driving force behind the TAP AMS ¹⁴C dating program, the results of which he completed just before his untimely death. A posthumously co-authored article on his research with several colleagues is due for publication in coming months.



William “Bill” W. Vernon

Bill Vernon passed away on October 30, 2018 at his home in Carlisle, PA at the age of 92. He held a Ph.D. in geology from Lehigh University and went on to found the Geology Dept. at Dickinson

College, retiring as emeritus in 1996. In 1984 Bill completed an MSc. in Anthropology at Penn under the mentorship of Vincent Pigott. Bill served as Project Geologist for the Penn Museum’s Thailand Archaeometallurgy Project (TAP), focusing first on the field study, mineralogy, and geology of the prehistoric copper mine at Phu Lon in northeast Thailand in 1985. Phu Lon is the first ancient mine dated and excavated in Southeast Asia. Then in 1988 he concentrated on the economic geology of the Khao Wong Prachan Valley in central Thailand, which had never been investigated in detail. Bill was a valued member of the Penn Museum’s Applied Science Center for Archaeology (MASCA) and pioneered the petrographic analysis of crucibles at prehistoric Phu Lon and Ban Chiang, which were among the first analyses conducted in Southeast Asia on such artifacts. His most recent contribution is his study of the Ban Chiang crucibles, published in volume 2B of this site’s metals monograph series (see article on page 1).



Ruth Brown

Ruth Brown passed away on February 14, 2015 at the age of 94. Although we devoted an article to her in our 2015 newsletter, we want to remember again her many contributions to our work. After retiring from a career as senior librarian at several distinguished scholarly institutions in Philadelphia, Ruth began volunteering for the Ban Chiang Project in 1992. We quickly put her skills to use in building the computerized reference

database of Southeast Asian archaeology and anthropology. That core database has since been further developed year by year and was put online in 2002, with funding provided from one of our grants from the Henry Luce Foundation. Today the database has over 17,000 references and is used world-wide. Southeast Asian archaeologists owe a debt of gratitude to Ruth's pioneering efforts that initiated this important scholarly digital resource. Upon her death, ISEAA received a bequest of \$150,000 from her estate, which has provided an essential resource for funding staff who have undertaken the preparation of our monographs for publication. Currently ISEAA is migrating the database to a new software platform based on Omeka, a free, flexible, and open source web-publishing platform for the display of library, museum, archives, and scholarly collections.



Elizabeth "Beth" Van Horn

Beth van Horn passed away on April 1, 2018 at the age of 65 after a brave battle with cancer. Shortly after Beth retired in 2003 from a career in product development at Verizon, she began volunteering with the Middle Mekong Archaeology Project (MMAP) in Laos and the Ban Chiang Project at the Penn Museum. Her principal contribution came in the areas of public outreach and marketing, using her skills from her long Verizon career to make Ban Chiang (and later ISEAA) research accessible to diverse global audiences. Beth came to Laos for three MMAP seasons. She first

maintained a humorous 2005 blog from the MMAP field season in Laos called "A Day in the Life of an Archaeologist." She also created (with help from the MMAP team) three bilingual photo exhibitions, two of which were mounted in the National Museum in Vientiane. She also gave workshops on exhibition development and public communication to the MMAP team. She was passionate about MMAP's capacity building objectives and efforts.

Working with other members of the ISEAA team, Beth wrote and designed content for the complete overhaul of the Ban Chiang website in 2017. She also brought ISEAA onto Facebook, and our Facebook page remains our most effective outreach medium. For her substantial volunteer work, Penn Museum recognized Beth as their 2017 Volunteer of the Year. Her bequest of an IRA of more than \$130,000 is allowing ISEAA to continue the MMAP work in Laos, including the upcoming study season, and the development of a full color book publication that will be accessible to both scholars and the public.

Lab NOTES

❖ In January 2018, Joyce White attended the "Early Rice Workshop: Rice in Southeast Asia—Past and Present," at the Sirindhorn Anthropology Centre in Nakhon Phathom, Thailand. There she presented "The Ban Chiang ethnobotanical collection and its potential role for archaeobotanists."

❖ In September 2018, Joyce White was the guest of the Thai government's Ministry of Foreign Affairs, as part of their celebration of 185th anniversary of Thai-United States relations. She gave several talks in Bangkok at the National Museum and other venues, and her work was extensively covered in several Thai media outlets. She also gave talks at Mahidol University in Bangkok about the Ban Chiang ethnobotanical collection she created in 1978-81.

❖ Also in September 2018 White attended the Indo-Pacific Prehistory Association meeting in Hue, Vietnam. There, she presented "Might Climate Change have been a Factor in the



Hermine Xhaufclair (center) receives the Early Career Award at the IPPA Congress in Hue. She is joined on stage by other applicants Rebecca Jones and Charlotte King, ISEAA Executive Director Joyce White, and award committee co-chair Ben Marwick.

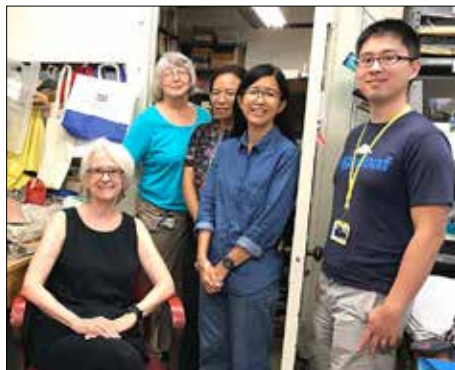
Emergence of Economies Incorporating Domesticated Plants and Animals in Mainland Southeast Asia? Some Data and Thoughts from the Interior” with Michael Griffiths, Kathleen Johnson, and Cyler Conrad, and “Applying a Life History Framework to Analyzing the Ban Chiang Metals Assemblage” with Elizabeth Hamilton.

❖Joyce White spoke at the 84th annual conference for the Society of American Archaeology in Albuquerque, New Mexico on April 11, 2019. She presented “Explaining Prehistoric Thailand’s 2000-Year Resilient Growth Economy and Peaceful Society: A Bottom-up Approach” at a symposium titled “Paradigms Shift: New Interpretations in Mainland Southeast Asian Archaeology.” The chairs were Vincent Pigott and Chin-hsin Liu, and the discussant was Ben Marwick.

❖The second ISEAA Early Career Award, which is the first academic award established specifically for the discipline of Southeast Asian archaeology, was awarded to Hermine Xhaufleur in September 2018 at the Indo-Pacific Prehistory Association (IPPA) meeting in Hue, Vietnam. The third round of the ISEAA Early Career Award for 2020 has been announced, with the deadline for nominations December 1, 2019.

❖Chantel White, Fabian Toro, and Joyce White published the paper “Rice carbonization and the archaeobotanical record: experimental results from the Ban Chiang ethnobotanical collection, Thailand” in the journal *Archaeological and Anthropological Sciences* in February 2019. <https://doi.org/10.1007/s12520-019-00797-5>

❖In July 2019 ISEAA received a visit from two professors from Silpakorn University’s Department of Archaeology, Praon Silapanth and Putsadee Rodcharoen. They were able to see our work with the monographs and database, the ceramics lab, and several galleries at Penn Museum.



Putsadee and Praon (center) visit the Ban Chiang Lab at Penn Museum.

❖As we go to press, the ISEAA Facebook page has surpassed 6000 likes!



New Face at ISEAA



Caleb Chow recently graduated with a Ph.D in Ancient Near Eastern archaeology from Trinity International University and currently is a volunteer librarian with ISEAA. He is beginning the organization of Joyce White’s library in preparation for its eventual deposition as a core collection for Southeast Asian archaeology in Laos. Caleb taught ancient Hebrew literature at Christian Witness Theological Seminary as an adjunct faculty member and has excavated in Israel since 2008. His primary research interests are in Levantine historical geography and Neo-Assyrian iconography, and he aims to promote greater public interest and investment in archaeology by pursuing further teaching opportunities in both public and academic spheres. He and his wife Ashley live in the Greater Philadelphia area and have a newborn son, Ethan.

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