



The Ban Chiang

Newsletter for the
Friends of Ban Chiang

UpDATE

Preserving a **UNESCO** World Heritage Site Issue #11 Fall/Winter 2001

"What has Joyce been up to?"

by Ardeth Abrams

The Ban Chiang newsletter *UpDATE* is back! We took over a year off from keeping you, "the Friends," informed so we could focus on scholarly publication. With our first monograph "in the hopper" and due out in December, we thought we would bring you up to date on what has been happening behind the scenes here.

Joyce has again asked me to write the opening statement so she could work on her volume on the Ban Chiang excavations, stratigraphy, and chronology. This volume will contain the dozens of plans and sections that Joyce and I have been drawing and labeling for the past five years!

We are delighted to have an assortment of contributors to the articles of this issue. Dr. Christine Sherman shares with us the trials and tribulations of editing the first volume in the monograph series, fondly referred to around the lab as "The Skeleton Book." Long time volunteer John Hastings describes his role in creating the CD (compact disc) of the skeletal data that will be included

with that volume. Soi (Chureekamol Onsuwan), who has had an incredible year of accomplishment (see Lab Notes), writes about her studies and return to Thailand for fieldwork.

Christopher King of the University of Hawai'i contributes two articles. Thanks to the Luce Grant (*UpDATE*, Issue #10), we were able to hire Christopher to design a scholarly website for Southeast Asian Archaeology data exchange. Christopher came to Philadelphia this summer to install the site, as his article describes.

In a second article Christopher tells of his plans for dissertation research involving isotope analysis of the Ban Chiang skeletons to learn about dietary change in Thailand during prehistory. As you can see, things have been very busy and productive with the Ban Chiang Gang.

Joyce will be visiting Asia during November and December, primarily to visit Soi in the field, but also to present a paper on the results of the Thailand Palaeo-environment Project in Kyoto, Japan, attend a conference in Hanoi, and discuss possible fieldwork in Laos. But soon she will be back working on the nitty gritty publication tasks for the chronology volume. While she is away, the volume on the archaeometallurgy may just jump ahead of hers! ❖

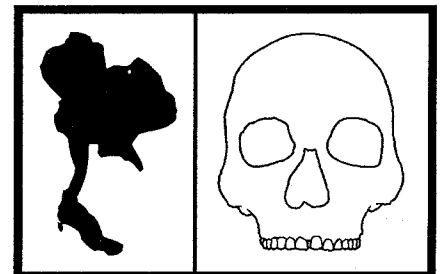
The Odyssey:

from Field, to Lab,
to Publication

by Christine Sherman

We are very excited to announce that the first volume of the monograph series is at the printers and will be ready for distribution this Winter! The first volume is *Ban Chiang, a Prehistoric Village Site in Northeast Thailand I: The Human Skeletal Remains* by Michael Pietrusewsky and Michele Toomay Douglas. There is an old rule of thumb in archaeology, "for every hour in the field plan on ten in the lab." In other words while a great deal of time and money is spent digging a site, the real time, expense, and effort comes after the material is out of the ground. Yet, this simple rule of thumb of time

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Cover art for the first book in the Ban Chiang monograph series.

<http://www.upenn.edu/museum/Research/banchiang.html>

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F. O. B. C.

ARCHAEO-COMPUTING?

by John Hastings

Like an archaeologist digging in the remains of an ancient civilization, I recently found myself digging in the remains of an "ancient" computer database. And like unraveling the meaning of inscriptions on clay tablets or stone stelae, I was deciphering an archaic computer language.

The first statistical analysis of the human remains from the Ban Chiang burials was done on a mainframe computer in the late 1970s. With the full publication of the data and analyses about to be released in a new Museum Monograph, it was decided that the raw data recorded from the skeletons would be included as an appendix on a compact disc. The pace of computer development, however, had left the old mainframe computer data unreadable by today's desktop computers.

Fortunately, I have been involved in computer work for Ban Chiang since the 1970s. Back in 1973, Ban Chiang's excavator, Chet Gorman, had tremendous foresight regarding the role that computers would be playing in archaeological research. He designed the excavation and artifact recording system from the beginning to be computerized, one of the first excavations probably in the world with this objective. The bag log and small find log numbering and recording systems were very computer-friendly. Moreover, Chet had all the material from the dig lent to the University Museum

for analysis so that detailed measurements and observations could be systematically recorded and preserved in computer databases. In those days the data were fed into a mainframe computer on IBM punch cards and recorded on rolls of magnetic tape, and the programming was also done with punch cards. Managing all this was my introduction to computing. I even learned to repair cardpunch machines.

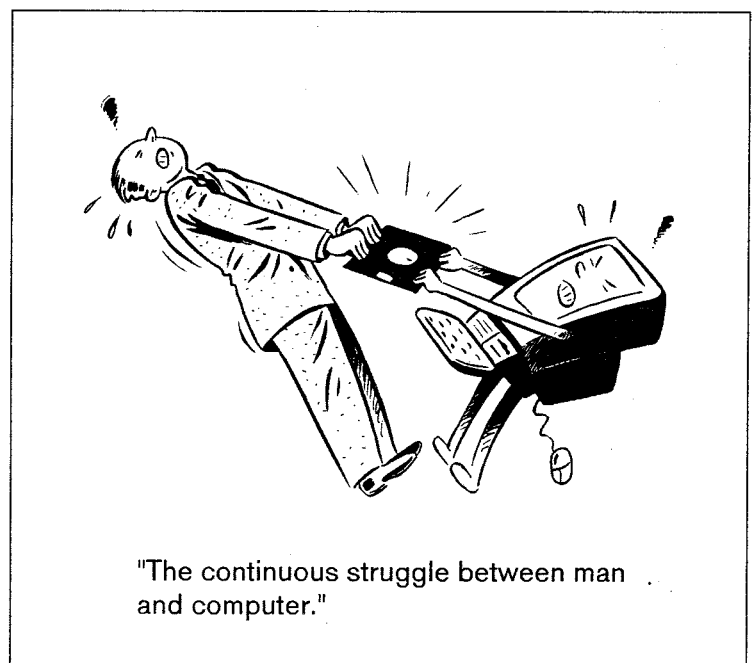
In the early 1990s, using my familiarity with how the old computers stored data, I converted the Ban Chiang mainframe databases to formats readable on the desktop computers that were replacing mainframes. Now once again this knowledge has enabled me to convert the skeletal data buried in mainframe databases so that it would be usable today.

With the help of Ban Chiang's Chris Sherman, a CD-ROM disc has been created that holds the raw data from the Ban Chiang skeletons and will be part of the human skeletal monograph as Appendix E. The data are in two formats. First, the data are in files suitable for a widely-used database program called Microsoft Access, ready to be analyzed however a researcher may wish. Sooner or later, though, Access will become obsolete in favor of some newer program. Therefore the data are also on the

CD in a format known as "delimited ASCII" which can be imported into any database program.

Yet there is another concern, namely how long will CDs be readable, and when will their technology go the way of mainframes and 5 inch floppies? Therefore a third part of the Ban Chiang Project's efforts to preserve Ban Chiang data for future scholarship is to make the data downloadable from the web. Here I pass the baton to Christopher King, webmaster of the Museum's Southeast Asian Archaeology Scholarly Website funded by the Luce Foundation. In the coming months he plans to put the skeletal data that has now been formatted for desktop computers on the web. Ultimately, all of the Ban Chiang data will be made available for scholars around the world to use for analytical and comparative purposes without any need for archaeocomputing skills. ❖

John Hastings
Ban Chiang Volunteer



COMING HOME. . . TO BEGIN FIELDWORK

by Chureekamol (Soi) Onsuwan

After spending six years abroad, my feelings upon returning to my motherland this time were different from previous return visits. First of all, I was excited because I was coming back for a long period of time (at least a year) in order to conduct my dissertation fieldwork. But I was also interested to observe changes that had occurred in Thailand as well as the changes that I knew had taken place in myself. The changes in me are a result of the intermingling of elements of both the East and West. I felt that returning to live in Thailand would force me to gain a

better understanding of just how much I have changed during the past six years abroad.

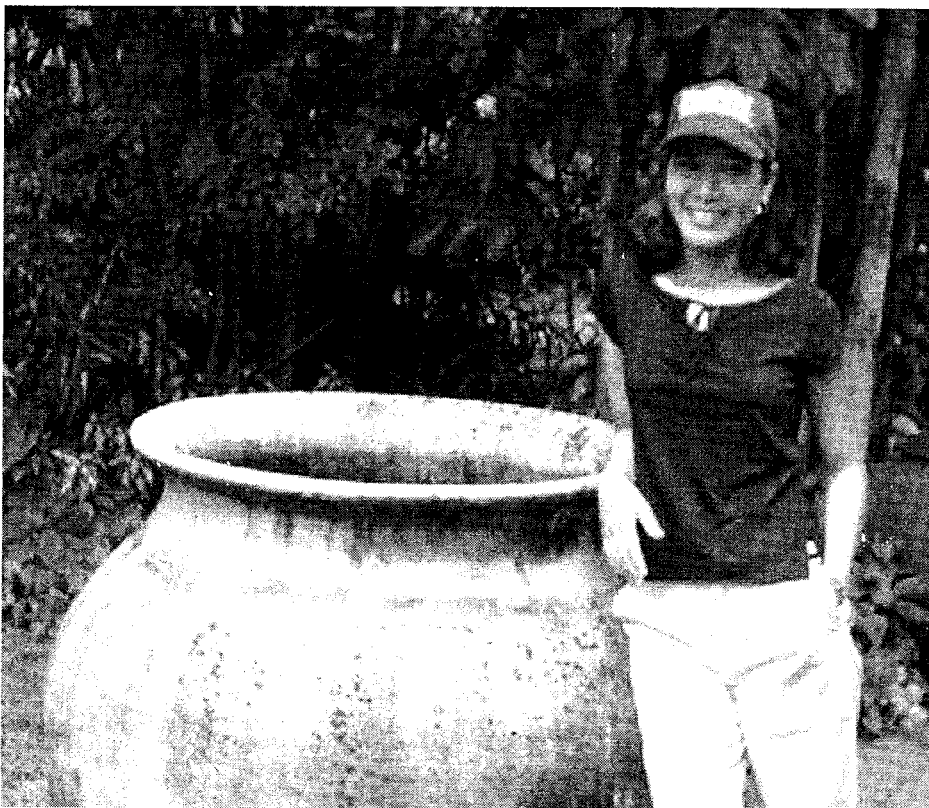
I have been back in Bangkok nearly two months and am still getting re-adjusted to life here. Bangkok seems like a very big place to live compared to Philly, and I had forgotten just how overwhelming the heat can be. I find myself missing the beautiful walk from my apartment to the University Museum. Surprisingly, I also miss being able to complain about the winter weather in Philly: the freezing cold, the snow and the biting winds. Each day in Bangkok seems so short. It seems like I spend most of my time in the car or the sky train. I am amazed how people cope with the exhaustion of commuting across this big city. Exercising regularly helps me to stay healthy and motivated here. My gym routine in Philly has been replaced by jogging around my parent's garden.

When it cools down in the evening it is really relaxing to run and breathe in some fresh air, even though I am constantly watching out to make sure my parent's dogs don't see me and try to bite me (I am still an outsider in their eyes). All in all, I am finding a good balance between working on my Ph.D. research and being a good Thai girl. This last part is a bit complicated to explain: it means dutifully participating in many kinds of social obligations with family and friends, where there is inevitably lots of good food and chitchatting.

Although my priority is to begin my fieldwork as soon as possible, I am also making an effort to get involved with the Thai academic community. More than anything else, the welcome and support from my old professors at Silpakorn University has been a big inspiration. I have been teaching part-time for the Masters degree students at Silpakorn University. My first class was all about post-processual archaeology (an approach that emphasizes reconstructing past people's beliefs and value systems). Although this paradigm is no longer new in the U.S., it is new for the Thai archaeology students, and I could tell that they were struggling to understand its applicability for Thai archaeology. I told them that it may seem difficult at this moment, but it provides useful food for thought. Also it is a good example to illustrate how challenges to old ideas are inevitable and can be very productive in an academic discipline.

My next assignment was to draw on my own experience in discussing the importance of forming relevant research questions and developing a field methodology to

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Soi next to a very large pot in her parent's garden.

Ban Chiang's Compudude

by Christopher King

The study of Southeast Asian archaeology is a world-wide affair that involves researchers from nearly every continent and dozens of countries. The distances have made it difficult for researchers to get access to "raw" data in order to make the detailed comparisons necessary for archaeological study. But with the world-wide web, this may no longer be a problem, if archaeologists only make the effort to use the new technology. In order to make research on Ban Chiang and other sites in Southeast Asia a little easier, the Ban Chiang Project has started a new website aimed at helping students, researchers, and professors find references and data they need for their research.

This is a two phase project with the first beginning with a web-based specialized bibliography that allows the user to search for references, select what they need, and retrieve the information to their computer in various formats. This is an important undertaking in the field of archaeology. Unlike fields such as medicine, access to research information on the internet for social sciences, especially small disciplines like Southeast Asian archaeology, is still very limited. This is the first website that we know of that lets the user search for references and download the information in publishable formats to their computer.

This past June, I visited Philly for five weeks to install the program and database on a server at the U. Penn Museum. Joyce and I

had been working on the database via e-mail since August 2000. We worked from volunteer Ruth Brown's computerized bibliography for the Ban Chiang Project. It was my first time living in a large city so I found it all very interesting. I loved the wonderful architecture and the mix of people. Of course the warm and friendly people of Philly made my stay quite enjoyable. As my visit overlapped with visits by archaeologists Vince Pigott and Karen Mudar, and with Judy Voelker and Joyce around, the dense constellation of people involved in (and discussions concerning) Thai archaeology were an unusual treat!

The second phase of developing the website will involve placing archaeological data from Ban Chiang onto the website so that scholars can more quickly have access to that data for comparative research. We will begin with the skeletal data. In addition, pages may be created to allow researchers to enter data for others to utilize. Standardized data recording forms will also be created that can be printed so that, for example, researchers in Japan might use the same recording sys-

tem used by the Ban Chiang Project when they record their skeletons, or crucibles, or bronze bangles, etc.

As we go to "press" the web-based bibliography is online and has over 3700 references. More references will be added on an ongoing basis. There are over 80 registered users from at least 14 countries ranging from Finland to Singapore and beyond. Please visit the website at:

<http://seasia.museum.upenn.edu/>



Christopher King is currently studying at the Department of Anthropology, University of Hawai'i at Manoa.

Praise of our scholarly website so far . . .

"Thank you very much for the website. I spent hours last weekend exploring. It was very easy to use, simple format . . . the database is quite impressive."

Sutee Veerawan

". . . very impressive! I bookmarked, registered, logged in . . . I certainly see this [website] getting alot of use; an excellent undertaking"

Donn Bayard, Associate Professor, Anthropology Dept.,
University of Otago, New Zealand

"You have a visually stimulating site . . ."

Meghan, Dreamweaver Technical Support Specialist

PLEASE PASS THE RICE

by Christopher King

"We are what we eat," a phrase that has been around anthropology and archaeology since the late 1970s, has literal meaning for the bioarchaeologist interested in reconstructing the prehistoric diet of ancient peoples. In the past, archaeologists could only study animal bones and plant seeds excavated from a site to figure out the overall subsistence for the whole community. Subsistence however refers to the overall resources available to a community. To answer questions about what individuals in a community actually consumed (the diet), a finer method of analysis using bone chemistry is used.

While learning about human osteology (study of bones), I became aware of the effects that environment and culture have on our bodies, and specifically, the skeleton. The skeleton is an interesting source to find out about the past. From studying the human remains of past societies, we are able to make inferences about diet and nutrition, health and disease, demography (size and density of human groups, the proportion of various ages in a society, fertility, mortality of subgroups of different age groups and by sex, and other vital statistics), and physical behavior and lifestyles in the past. In other words, the study of bones provides us with clues about the life history of an ancient society that cultural remains like pottery and tools cannot.

Dietary behavior is fascinating as it is affected by both culture

and environment. What foods are available in an environment is only the starting point. Individuals are taught that certain foods are good while other ones are bad, and some foods are only appropriate in a certain cultural context (e.g., wedding cake at a wedding). Cuisines stress some foods over others, regardless of availability, as basic to everyday food consumption. We need only look at our own modern day diet to know that dietary preferences have profound and long-term impact on the health and disease processes of every society.

Back when I was a new PhD student at the University of Hawai'i in 1997, I was trying to decide on the topic for my dissertation research, a common struggle for graduate students. I knew that I wanted to work in Southeast Asia and knew that our department housed skeletal material from Ban Chiang on loan from Thailand. My supervisor (Dr. Michael Pietrusewsky) suggested that I might think about dietary changes. Since this was already a strong interest of mine I quickly jumped on the idea.

Currently the best method for understanding dietary changes in a population over time is by studying the bone chemistry of individual skeletons. By looking at the diet of a sample of individuals in a population, we can make inferences about the diet of the population as a whole. Reading chemical signatures (such as isotopes) that are passed from the foods consumed to the skeleton allows the documentation of the ancient diet.

This type of research has not yet been conducted in mainland Southeast Asia as, therefore I wasn't even sure the method would work on bone from this tropical region. To find out if the

method was worth pursuing, I did a pilot study on a few of the prehistoric human bones from Ban Chiang. The study was a success!

Once I knew it was possible to extract meaningful chemical signatures from prehistoric skeletons from Thailand, I began to focus my thoughts on what pertinent questions can be asked about the prehistory of northeast Thailand. Ban Chiang like many other prehistoric sites in northeast Thailand covers a long time period and thus lends itself to studying change over time. Initially the people probably lived in small extended family hamlets subsisting on hunting, wild plant foraging, and most likely some sort of horticultural practices. Eventually populations grew and villages became established. Archaeologists believe that at a certain point in Ban Chiang's prehistoric development a stronger commitment to rice cultivation occurred.

For my dissertation research I plan to gather evidence to indicate whether the diet actually did change significantly with increased rice production. My research will be an important step towards understanding population response to living in the monsoonal tropics of Southeast Asia. The objectives of this study are to: (1) characterize the diet and nutritional status of the prehistoric inhabitants of northeast Thailand, and (2) integrate these data with previously collected data on the health status of this population. Through this analysis of human bone I will decipher the relative contribution of distinct food classes to the diet, correlate changes in diet with changes in culture over time, and assess differences in diet between males and females within discrete time periods.

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The Odyssey

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management does not include publishing the findings of the excavation. Drs. Michael Pietrusewsky and Michele Douglas had the laborious task of not only completing the analysis of the human remains from the Ban Chiang excavations of 1974 and 1975, but they also went through the painstaking process of writing a monograph that detailed their findings in a manner that can be understood by specialist and non-specialist alike.

It was during this last step of the process where I joined the effort as the project editor in 1999. I soon learned that I had come to the writing stage of the skeletal volume relatively late in the game, for in fact the first manuscript describing the remains had been completed in 1980 by Mike Pietrusewsky. Shortly after the University of Pennsylvania received the manuscript, Chet Gorman, then project director, was diagnosed with cancer. Gorman's untimely death left the publication of the skeletal manuscript in question. It was during the early 1980s that Joyce White became involved in directing the Ban Chiang Project. Joyce was put in charge of the Smithsonian exhibit, "Ban Chiang: Discovery of a Lost Bronze Age" and later was asked by the University of Pennsylvania Museum to change her dissertation topic to revising the Ban Chiang chronology. The revised chronology by White made parts of the skeletal manuscript by Pietrusewsky outdated. To make a long story short, Michele Toomay Douglas, a graduate student of Pietrusewsky's, agreed to re-analyze the skeletal material from Ban Chiang in 1992. Together Douglas and Pietrusewsky completed the re-analysis in 1994 and submitted the

first draft of their manuscript in 1997. From 1997 to 1999 Douglas and Pietrusewsky worked with Joyce White, series editor, revising and expanding the initial draft.

This is where I came in during June 1999. By August 1999 a third draft of the skeletal manuscript had been written, submitted to the Museum Publications editorial committee for approval, and sent out for peer review. Because the appendices were unlikely to be affected in the peer review process, I began to copy edit these and helped John Hastings convert the raw data into personal computer format for a CD to accompany the volume (see John Hastings' article). To all of us it looked as though we were well on our way to seeing the published book, but alas two unforeseen events would further delay the publication: the director of Museum Publications resigned and I discovered I was pregnant! At the time none of us knew how these events would effect the publication process, hence we carried on.

The anonymous peer reviews came back in December of 1999 and were glowing: the external peer stated, "This is one of the finest studies of ancient human skeletal series I have known . . . The authors are to be congratulated for this ambitious and very valuable contribution to biological anthropology. The work will be of keen interest to all Southeast Asia and Thai scholars, especially anthropologists, archaeologists, palaeodemographers and historians." But of course as all peer reviewers do, they also asked for changes, which the authors made submitting the next draft in March 2000.

In April of 2000, my daughter, Mary Margaret, was born. After six weeks of maternity leave I returned to work at part-time status until January 2001, when I returned full-time. During this period the authors and I worked on the final editing of the

text, tables, and figures and on February 12, 2001, the complete manuscript was submitted to Museum Publications. A new director of Museum Publications was hired, and still further changes had to be made to the manuscript per her instructions. In Spring 2001 Museum Publications sent the manuscript out for printer bids and after a fair amount of back and forth the contract was awarded in May 2001.

Truly this odyssey must be coming to an end and in fact it is. The first page-proofs came in June 2001 and these were corrected and returned to the printer. Then in August 2001 the final proofs came in, the index was completed, and all sent back to the printer for printing and binding. The books should be available in December 2001. The main body of the monograph is 267 pages and includes 114 figures and 82 tables as well as an additional 198 pages of appendices.

Twenty-six years after the Ban Chiang excavations were closed the first volume of data is to be published. Our heartfelt thanks go to Mike Pietrusewsky and Kell Douglas for staying the course during this long and tedious process. Also I would like to thank the Ban Chiang Gang for all their various help in preparing this manuscript for publication. ❖

*Dr. Christine Sherman
Project Editor*

**Skeleton Monograph
Purchasing
Information:**

**see accompanying
flyer**

COMING HOME. . .

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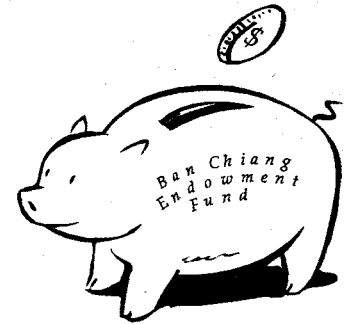
answer these questions. I was a little frustrated by the student's initial reluctance to become involved in discussion. But I could understand because I know that, unlike in the United States, Thai students are not encouraged to speak out in class. Over the past few weeks I have tried to find ways to make the students feel more relaxed and willing to participate in class discussions. I told them that I was faced with the same problem when I began studying in the U.S., but what helped me was to write down questions while reading my assignments. The discussions have been improving each week and I can already see from my brief

teaching experience that this is something I would like to do more of in the future.

Because it is the rainy season, I have been able to devote some time to pre-fieldwork chores, such as developing a ceramic style index and working out field logistics. I plan to begin my fieldwork at Nakhon Sawan (central Thailand) in a month or so. I am hoping that some of the Thai archaeology students will be able to take part in my project and that, by doing so, they will have a chance to realize the important link between archaeological theory and practice. I think this is something that does not receive enough explicit attention in Thai archaeological training.



Chureekamol Onsuwan



Is it time for you to renew your support to the Ban Chiang Project? – every contribution is gratefully received!

-Levels of Giving:

over \$1000	<i>Bronze Castor</i>
\$500-999	<i>Pottery Painter</i>
\$100-499	<i>Iron Smith</i>
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-Send to:

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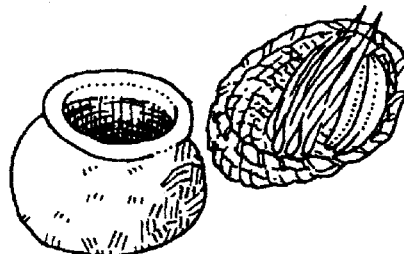
PLEASE PASS THE RICE

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The significance of this research to understanding the human history of Asia is enormous. At the level of methodology, contributions to paleodietary reconstruction will be made by increasing our understanding of bone chemistry in the monsoonal tropics of Southeast Asia. At the subdisciplinary level, bioarchaeologists will gain greater understanding

of the dietary patterns and changes in nutritional level of prehistoric northeast Thailand. And at the level of human biological history, the evolution and long term impact on human biology of one of the world's major subsistence systems—that based on the cultivation of rice—will be further elucidated. ❖

C. K.



✂

Become a Friend of Ban Chiang!

- Enclosed is my contribution of \$_____ payable to the:
TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA.
- I would like to renew my contribution of \$_____ to support the Ban Chiang Project.
- I would like more information about the Ban Chiang Project.
- I have changed my address. The following is my new address:



His Excellency, the Ambassador of Thailand, Tej Bunnag, (seen in a light grey suit) visited our lab on July 25th.



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Visit the Ban Chiang website:

[http://www.upenn.edu/museum/
Research/banchiang.html](http://www.upenn.edu/museum/Research/banchiang.html)

LABnotes

❖ Contributions to the **Ban Chiang Endowment Fund**, started a little over a year ago, as we go to "press" total **over** \$16,000. Thank you for your ongoing support!

❖ **Netscape** has designated our public website (for address see above), the handiwork primarily of project editor Christine Sherman, an Open Directory Cool Site. "You have a wonderful site. Amusing, and perfect for the casual browser," says Brandon Bradshaw, editor for *Archaeology: Asia*.

❖ New and returning student members of the Ban Chiang Gang are **Bill Canning** (research assistant), **Yezi Yun** (project artist), and **Lauren Buckalew** (project bibliographer).

❖ His Excellency, the Ambassador of Thailand, **Tej Bunnag**, visited our lab on July 25th.

❖ **Vince Pigott** and **Karen Mudar** were in town in June to work on the National Science Foundation grant proposal for the Thailand Archaeometallurgy Project (TAP).

❖ Additional visitors to the lab in July, from India, **Pradeep Mohanty** and from Germany, **Andreas Reinecke**. **Bill Vernon** also came in to go over the crucible data with Christine Sherman for the metals volume.

❖ **Soi**, (Chureekamol Onsuwan) has had a remarkable year. After returning to Philly from a year at the University of Hawai'i, she (1) finished her Masters thesis and got her degree; (2) passed her oral PhD exams with flying colors; (3) wrote her PhD research proposal for Penn's Department of Anthropology; and (4) wrote a grant proposal to the Wenner Gren Foundation to support her fieldwork. She also finished her job with the Ban Chiang Project of writing brief pot descriptions in Excel spreadsheets for all reconstruct-

ible pottery for publication in Joyce's book on the chronology and stratigraphy!

❖ **Elizabeth Hamilton** is continuing her work on the metals volume and published a research note on her work in *Expedition*, Vol. 43, No. 2.

❖ To better balance the demands of motherhood and worklife, starting in August, **Christine Sherman** began part-time status, working at home as well as one day a week in the Ban Chiang Office.

❖ **Alyc Helms**, former student assistant to Christine Sherman, has moved on to Grad School at Indiana University. She will be studying Anthropology and Folklore.

❖ On August 19th, **Ardeth Abrams** gave birth to her second son, Nathaniel Alec (10 lbs 2 oz, 23.5 inches).