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Notes on the Anau Inscription

by
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NOTES ON THE ANAU INSCRIPTION

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Victor H. Mair

May-June, 2001

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ACKNOWLEDGEMENTS

I am indebted to Fred Hiebert for telling me about the seal in the first place and for spending hours explaining the circumstances of its discovery. He also kindly supplied me with photographs, research reports, and valuable research materials.

I am grateful to Naomi Miller who related her own recollection and analysis of the events that occurred on the day when the seal came to light during excavations at Anan.

QIU Xigui kindly met with me in Beijing (Peking) to discuss the inscription on the seal.

Thanks are also due to all those, whether they be friends or strangers, who showed such intense interest in the inscription, thus spurring me forward in my investigations.

PREFACE

This is obviously a working paper in the truest sense of the word. By reading through it from beginning to end, one can get an idea of the development of our understanding about the Anau seal and its inscription. My research on the Anau seal is far from completed. First of all, I am waiting for an important photograph from Fred Hiebert which will reveal additional evidence concerning the extent of the damage to the seal along the side with the "hourglass" graph. Fred is now in Paris, and I will soon be leaving for China again, thus I cannot delay publication of these notes any longer. Furthermore, I intend to go to Turkmenistan in October to examine the seal myself and to see what other relevant information I can dig up concerning it. Consequently, it is quite likely that I will be writing a follow-up to these notes after I return and after I receive feedback from those who read them.

"John," to whom several of the letters in these notes are addressed, is John Noble Wilford, Senior Science Editor at The New York Times.

10/VI/01

Dear Colleagues,

The attached notes consist primarily of three letters, written over the space of a month, and related materials reaching back to November 1, 2000. They have to do with what will undoubtedly remain one of the most important issues in 21st-c. archaeology, namely, the significance of a small seal from the Bronze Age site of Anau in Turkmenistan for early contact between east and west Asia.

Sincerely yours,
Victor

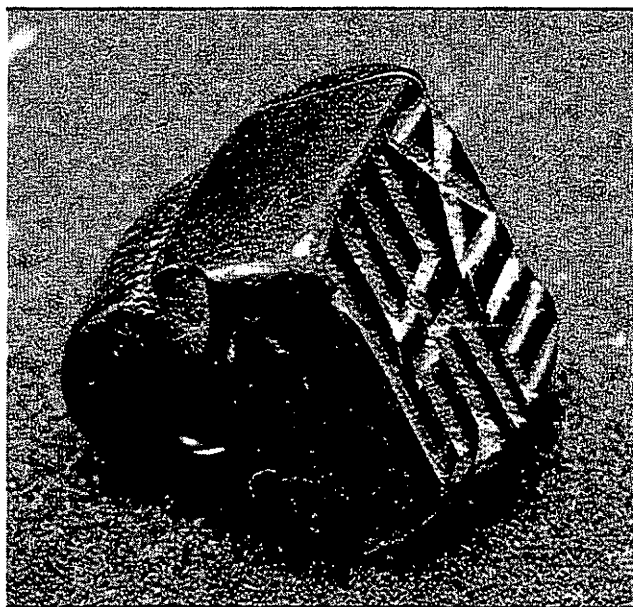
N.B. These materials are being sent to you exactly as I first wrote them, without any attempt to type or otherwise clean them up. There are several reasons for this: 1. the numerous unusual graphs that had to be written in by hand, 2. the diverse nature of the contents, 3. the ongoing character of the research. Nonetheless, because of the extraordinary importance and topicality of the topic, I have decided to issue the materials as an unusual number of Sino-Platonic Papers.



Unique Bronze Age Stamp Seal Found in Central Asia

The University of Pennsylvania Museum Central Asia archaeology project has recently completed its third season of investigation at Anau depe in Turkmenistan. This region, part of the Soviet Union for most of the 20th century, was surrounded by ancient literate civilizations—China, the Indus valley, Mesopotamia, and Iran. Although the ancient societies of Central Asia also had cities, temples, palaces, irrigated landscapes, and vivid artwork, until recently they lacked evidence of number or writing systems.

At the small archaeological site of Anau, we uncovered this June the eroded top of a large room complex dating to the Bronze Age (2300 BC). We did not expect such a large and well-built construction. We spent the entire season excavating this building, whose walls, even now, stand more than 2 meters high. The fill from these rooms contained finely made ceramics and many pieces of clay used to seal vessels or parcels. Within the building we found the remarkable engraved stamp seal pictured here.



This small (ca. 1.3 by 1.4 cm), beautifully carved seal found at the site of Anau depe is made of shiny black jet, and its inscription is emphasized with a reddish brown pigment. I had the honor of announcing its discovery on October 10, 2000, at a conference presided over by the President of Turkmenistan, Sapmurat Niyazov.

This object has parallels only at the Central Asian site of Altyn depe. The engraved symbols or letters are unknown to us. At first we thought the inscription might be Harappan, from the Indus valley, but we now realize that it is unconnected with any of the writing systems in Mesopotamia, Iran, Harappa, or China. It most likely reflects a local symbolic system. Seals are used in the administrative system of an economy that needs to keep track of goods such as supplies for temples, barracks, or palaces. Even a small site like Anau has imposing architectural remains, and now we have in this seal evidence for Anau's involvement in a managed system of distribution. This pattern of small and large sites having elite and bureaucratic functions is unique to the Central Asian Bronze Age.

Fredrik T. Hiebert

*Robert H. Dyson Assistant Professor of Anthropology
Assistant Curator, Near East Section*



Drawn by Ardeth Abrams



XINJIANGDIN KEZIWELINŌIAN MƏDİNİ YADIKARLIQLAR

XINJIANG UYŌIUR APTONOM RAYONLUK
BOWUGUƏN TŪZGƏN

MƏDİNİ YADIKARLIQLAR NƏXRIYATI
1975- YILI . BEYJING



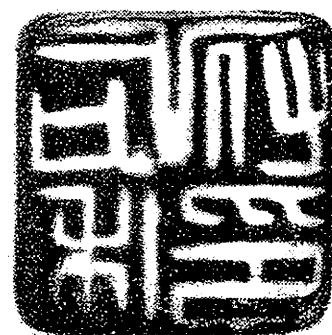
二五 木 榔 头 东
25- YAOIAQ BOLKA

The Niyä seal



二四 “司禾府印”印范 东汉

24- “ZIRAƏT MƏHKİMİSİ TAMOIISI”NING
KELİPI Xarkiy Hən



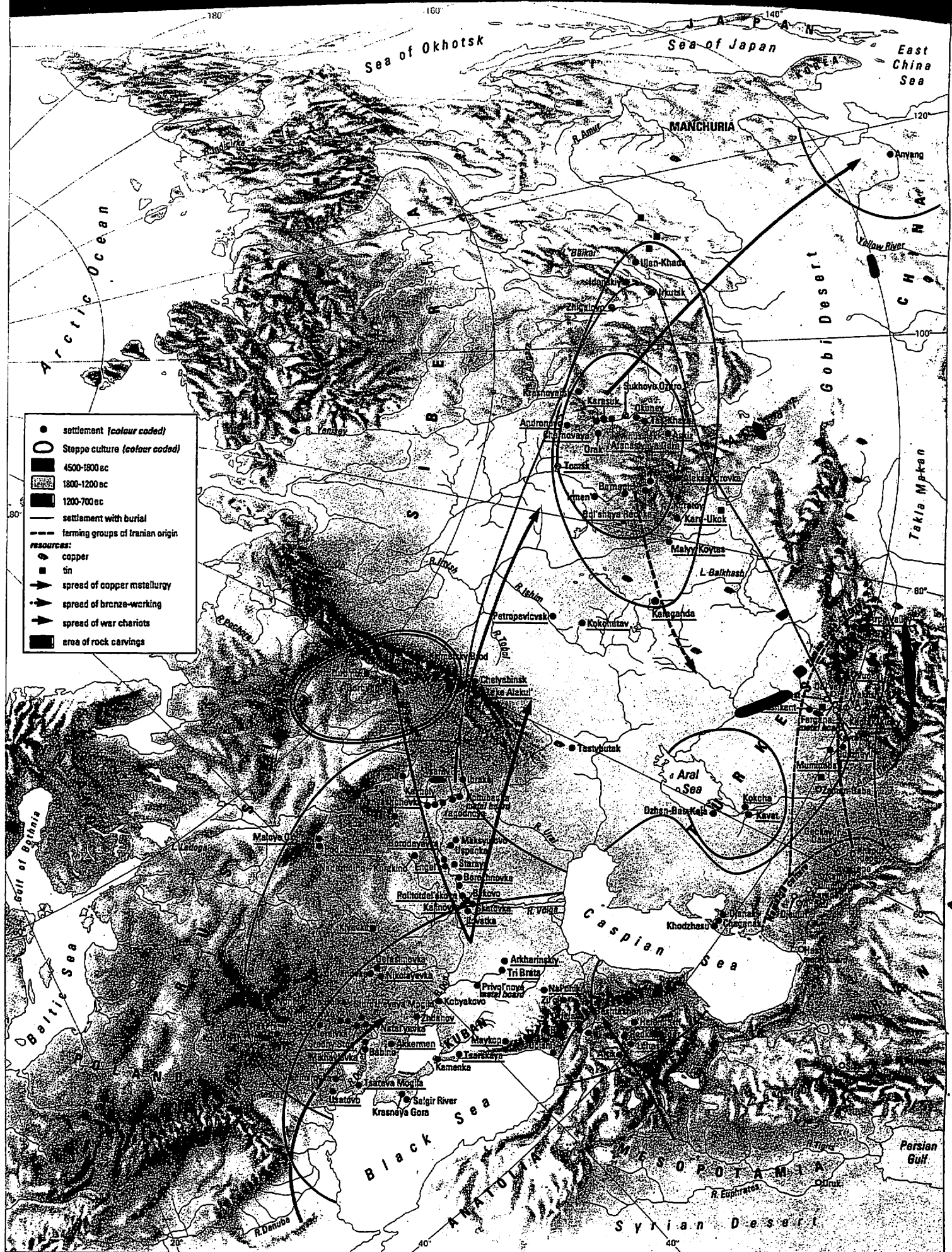
二四 “司禾府印”印范 东汉

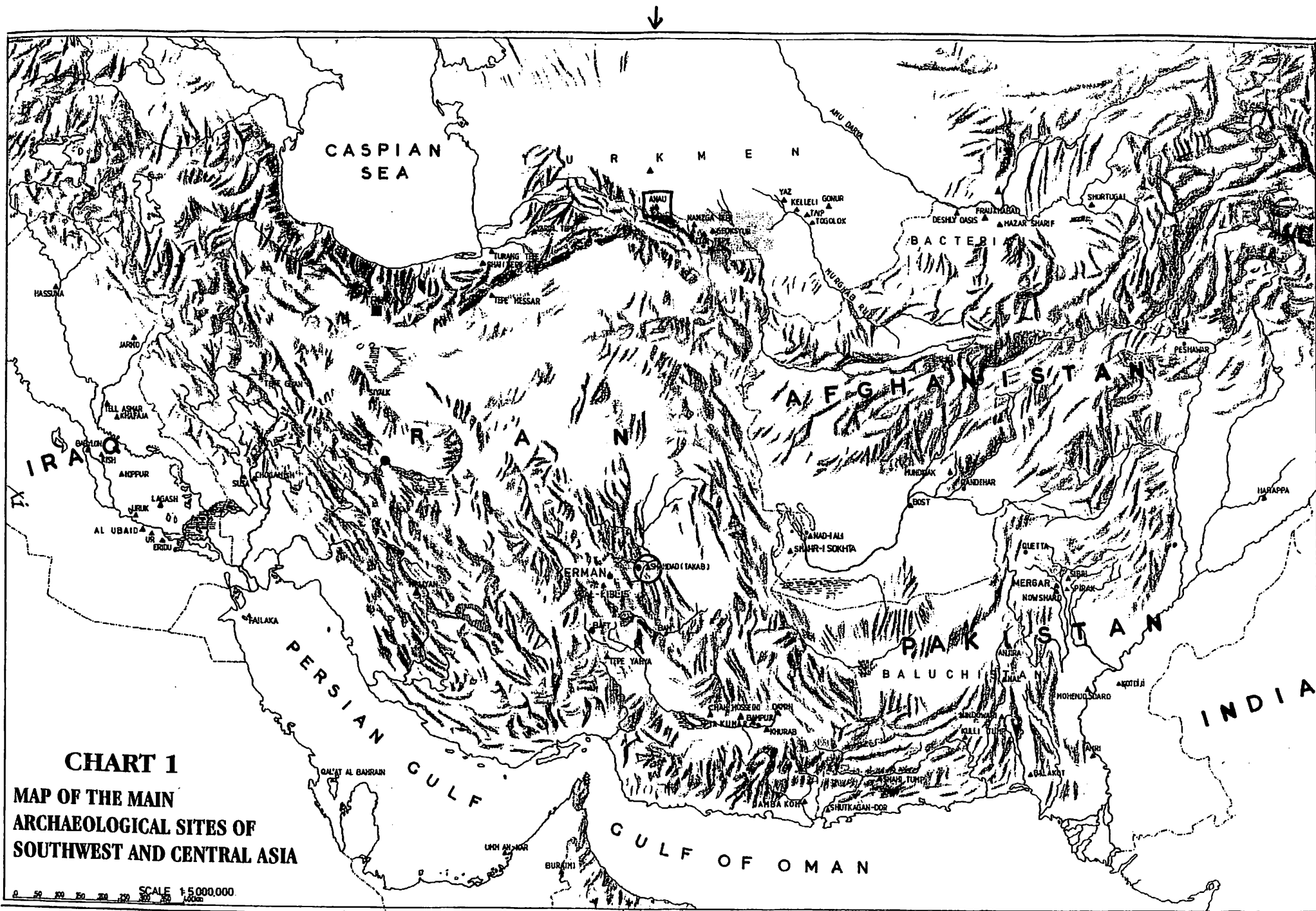
24- “ZIRAƏT MƏHKİMISI TAMOIISI”NING

KELIPI

Xərkiy Hən

X200%



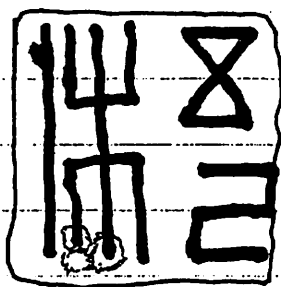


Foldout map from Hakemi, Shahdad.

May 9, 07

Dear John,

I went back and looked at my notes on the Anan jet signet found by Fred Kiebert. Some rather amazing observations may be made:



← 五 is found on ^{late} pre-lithic pots, (isolated owners' or makers' marks, more likely owners'). I knew it from coins from around the time of the beginning of the Christian era, where it definitely means "5." However, it is already in use with the meaning "5" by the time of the ^{Shang Dynasty} oracle bones, which I told you was 1200 B.C.E. ^{is North China says the north west}

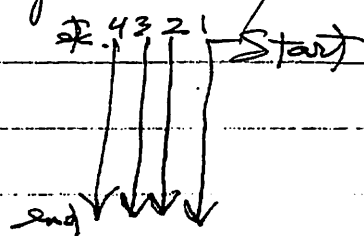
己 This graph is also found on the oracle bones and means "record, regulate; annals"

is Modern Standard Mandarin



What is incredible is that 五己 (pronounced wu ji) actually means something in ancient Chinese: the five regulators of time — years, moon/months, days, planets, and calendrical calculations. Furthermore, ~~this~~ this expression occurs in the "Hong fan" (Great Plan) chapter of the Shang shu or Shu jing (Book of Documents), one of the Chinese Confucian classics, which is full of myth, legend, and accounts of the earliest prehistoric and historic times.

As you know, Chinese Texts are read
thus:



So the signet is also
in conformity with this ar-
rangement.

Thus we have a numeral and an actual word.

I do not know the meaning of the third
and final graph, but it is made up of two
components:

! & 卩

I view this stroke as
symbol used to
modify the 卩, which
would make it function rather
like a radical ("semantic key")
in the fully developed script.

Now, this graph also occurs
on late Neolithic pot marks
in China — especially the northwest
North — and on the oracle bones
where it means "tree, wood" and
would have been pronounced
something like moks (mu is
Modern Standard Mandarin pronunciation)

Thus, all three graphs fit well within the framework of the ~~the~~
earliest known Chinese writings. However, I do not
view them as evidence of Chinese influence at Anan
because Chinese script ~~is not~~ known until 1,100 years
after the 2300 BCE date of the signet. Fred says
the stratigraphy is solid and I trust him.

So, instead of thinking that the Anau sigmet inscription is a Chinese artifact, I hold that it is good evidence of ^{an} eastward ~~diffusion~~ movement of basic elements of the Chinese script. You will recall that, at Holly's writing conference, I gave other evidence for movement of script elements from the West through intermediary points toward China during the late 2nd millennium, & you were kind enough to include my argument in your report of that conference.

Fred says that his sigmet was almost certainly a local product, because — aside from a site near Anau — there was ~~no~~ no other source of jet for more than a thousand kilometers.

Consequently, I believe that the sigmet inscription (and I'm absolutely convinced that it indeed represents genuine writing) is phenomenally important because it helps to document the transmission ^{of writing}, eastward.

A couple of other notes:

1. Because 𣎵 is "wood or tree," I think the 𣎵 sign probably ~~was~~ signifies some sort of tablet or record.
2. The sigmet has a whole pierced through the

back of it. This was probably for affixing it to the record book in question.

3. Fred says he believes the room in which he found the signet was an ~~temple or ritual~~ ^{administrative} center. That would fit perfectly with the explanation for the inscription that I have put forth above.

Finally, we ~~do~~ ^{should} not ~~need to~~ assume that these three graphs were pronounced in a Chinese fashion. Since we do not yet know the language of Anan, we have to remain agnostic about the pronunciation of the graphs there. But the meaning would remain the same at Anan as in my ^{Chinese-style} interpretation above.

Best,
Victor

N.B. On May 25, I flew to East Asia for 5-6 days in Hong Kong, 2-3 days in Shanghai, and 2-3 days in Beijing. The next letter was written just before and during my flight back to the United States.

This will be a fairly long letter, but it is full of lots of important information. 7

礼士宾馆

LI SHI HOTEL

5/VI/01

Dear John,

In a couple of hours, I will be flying back to the States and may actually finish writing this letter while I'm on the plane.

袁 錫圭

Yesterday evening I met with QIU Xigui to discuss the Anan signet inscription. His response was pretty much what I expected, but all the more startling because of how closely it coincided with my prediction.

The first thing he said was, "If we ignore the archaeological context, then I would say this inscription can't be earlier than the Western Han (206 BC - 9 AD)." This is almost exactly what I said when I first saw the inscription. That is why I pressed Fred Hiebert so hard about the dating, but Fred insisted that the stratigraphy, pottery, and everything else pegs the signet at 2300 BC. I have to believe Fred because he is

a competent (may, gifted) archaeologist, but I'm going to quiz him hard about the dating again when I get back to Penn. Professor Piu does not know Fred and he himself is not an expert on ancient Chinese writing, so he kept suggesting that the seal must have gotten mixed up in the stratigraphy, that it somehow slipped down through the layers from above. Not only do the characters on the seal seem like Western Han forms, but the very shape of the seal itself reminds him of Western Han seals. To Prof. Piu, it's almost unthinkable that the Anan seal inscription could date to 2300 BC, so closely does it resemble W. Han writing.

However, there's more to be said. As I pointed out in my previous handwritten letter to you all three (Piu and I both agree that the seal, ^{inscription} consists of three characters) of the graphs were already found on the oracle bones (c. 1200 BC) and two of them (the 1st & the 3rd) occur as neolithic pottery marks. Now, it is true that the third graph (𠄎 — I am ignoring the "radical" or semantic


9
part of the graph ^{on the left side} for the moment because that is a separate problem, but will return to it later) is written as * on the oracle bones and on Neolithic pots, but as 𠄎 on the "small seal" script of the W. Han. This may be purely a result of the medium, it being natural to scratch * on the hard surface of a bone or pot, but relatively easy to carve 𠄎 into a soft stone like lignite.



I was extremely gratified when, after two minutes' reflection, Professor Die identified the second graph (E) as 𠄎 ji which, as you will recall, is precisely how I read it several weeks ago. Because the stone has cracked off on the right side (this is evident on the top right corner of 𠄎), I am more convinced than ever that E is actually 𠄎.


As for 𠄎, I still think that the basic part of the graph is 𠄎 ("tree") which means that ~~the~~ it has something to do with plants or a plant derivative. I believe that

The 1, as I mentioned in my previous letter is some sort of signfic which specifies or modifies the type of plant (or plant derivative in question). Professor Diu agrees with me, but he offers an intriguing suggestion.

He would like to turn the seal upside down and

read it this way: . What is more, he

has a hunch that  is actually  (the top right part having been damaged [that is how I drew it - bottom left - in my previous communication]) and that it means something like he ("grain").

Although Prof. Diu did not volunteer an explanation or translation, that would yield some such reading as "grain: record five [units]" which would certainly fit well with Fred's idea that the room in which the seal was found ~~was~~ an administrative area, instead of my "Five Regulators file/archive." My only hesitation with this interpretation of Prof. Diu is that, to the best of my recollection, the signfic for  indicating different kinds of plants and

plant derivatives invariably ^(or at least usually) show up on the left side rather than the right (if we follow his proposal to invert the seal).

* Prof. Jin provided one other electrifying piece *
 of information. He had a fairly clear memory of the
 discovery of a nearly identical seal in — of all
 *** places — Xinjiang. That would put it smack dab
 in the middle of mummy country, but would also fill
 in the long gap between Anan (Western Central
 Asia) and the heartland of China. Prof. Jin says
 that this other seal was also made of lignite and that
 'it bore four characters similarly arranged. As he
 described this second seal, I vaguely recalled having
 seen such a seal published in one of the major Chinese
 archaeology journals (Kaogu or Wenwu?) back in
 the 60s or so. You can rest assured that I
 will scramble to find the old report on this other
 seal soon after I get back to Penn!

I trust that the contact information I gave
 you for LI Xuejin enabled you to reach him

at Tsinghua University in Taiwan where he is temporarily resident. I have no idea what he may have told you, other than perhaps that, as Chinese characters from a single period, the Aramaic seal graphs present anomalies. Likewise, Prof. Yin says that both of the Central Asia Sogdian seals look as though they were written by people who had contact with the Chinese writing system and may have tried to imitate it without getting the forms entirely right. Maybe. But if Fred's dating is reliable, we have to go back to ^{the sort of} the explanation I offered in my previous letter to you, at Holly's conference on writing two years ago, at a meeting of the International Congress of Asian and North African Studies in Toronto about a dozen years ago, and in a book that I started to write two years before that: ^{Cambridge (1987)} namely, the flow of influence was operating in the opposite direction. I have also all this time been saying that the ^{ultimate} origins of Chinese writing lie not in Mesopotamia or Egypt,

but that they should be intimately linked with the same
complex of peoples who brought bronze metallurgy and
the horse-drawn chariot during the second millennium
BC. The Anan seal brings us one step closer to
figuring out how all of the pieces of the jigsaw
fit together.

So as not to tax your endurance any further,
John, I had better bring this lengthy epistle
to an end. Let me just say that, in Prof.

Qiu (Chinese Department, Peking University) and in
Prof. Li (Chinese Academy of Social Sciences,
Archaeology Institute), you have two of China's
very best paleographers. Both of them see the
Anan seal inscription as somehow (indetermin-
ately) linked to the Chinese writing system. I
believe that anyone who is familiar with ancient
Chinese writing would find that conclusion in-
capable.

No matter how this saga turns out, the Anan inscription is of tremendous significance. Whether it shows late 1st millennium ^{BC} Chinese influence on Western (Central) Asia or late 3rd millennium BC West Asian influence on China, it is indisputable evidence of transcontinental connectedness.

Best regards,
Victor
VHMin

P.S. Prof. Jiu is aware that I was interviewing him on your behalf and he has given express permission for you to quote him as conveyed by me in this letter. It is my impression that he does not speak English, so it might be fruitless for you to contact him directly. Anyway, his home tel. # is ⁸⁶⁻¹⁰⁻6375 6579. His son's e-mail is: giushi@pku.edu.cn

P.P.S. The Xinjiang lignite seal was apparently collected without any clear provenance. According to Prof. Jiu, Chinese scholars seem to assume that it is W. Han for the same sorts of reasons he assumed that the Anan seal is W. Han (see above).
(8)





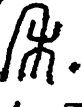
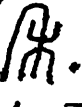
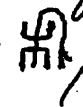

P.P.P.S. Almost forgot! Louise Fitzgerald-Huber wrote¹⁵ a major article entitled "Pijin and Eritou: The Question of Contacts with Distant Cultures," Early China, 20 (1995), 17-68 in which she discussed some sheet-metal vessels, including pouring vessels like the Chinese ju and drinking vessels like the Chinese gu. The site where these vessels were from, Shadad in southern Iran, is intimately related to the Bactria-Margiana complex. Dr. ^{F.}Huber also adduced a number of other convincing pieces of detailed evidence which point to ideas and cultural traits from ^{Central} Western Asia showing up in the seminal centers of Bronze Age China. Dr. ^{F.}Huber is a researcher of long standing at Harvard. Her address^{#521} is 20 Prescott St. / Cambridge, MA 02138. If you need them, I can send you additional contact information and a copy of her article.

All of these things add up!

Time to board the plane.

Additional notes

1. The Western Han forms of the graphs referred to by Prof. Piu are called the "Small Seal" script. They were also current during the latter part of the 3rd c. BC. As the name suggests, this style of writing is particularly associated with seals.
2. I need to look at more photographs of the Anan seal and, hopefully, the object itself which Fred may bring back from Turkmenistan. (He had it here last

year, but I did not get to see it.) One thing I'd be most interested in scrutinizing carefully is the extent of the damage on the bottom left corner. Remember that in my letter of May 9, I drew the "plant" character as , indicating that the stone had been chipped away at the edge. Prof. Yin thinks that the graph may actually have been  or, more precisely in his inverted orientation, . Now, this gets really interesting, because archaic forms of the graph for 禾 (hé ["grain"]) may appear thus,  or, in extreme cases, even  or . The little extension near the end of the straight line "signific" on the right side would then perfectly match the detail of the spike at the end of the stalk. The only difficulty here is that the inverted form of the graph has the spikes bending over to the right , whereas ^{nearly} all of the archaic forms of the Chinese graph have it bending to the left. This is not an entirely insuperable problem, however, because oracle bone graphs occasionally flip over ^{symmetrically} on a left-right axis. I have actually seen oracle bone forms of the graph for 禾 written as , but they are relatively rare.

**

Furthermore, if there really were transmission between
Anan and China — regardless of the direction it was
flowing — it might have been possible for the graph
to become shifted from left to right (or right to left
as the case may be) on its vertical axis. 17

What about Σ and Ξ ? Σ is still Σ no mat-
ter whether inverted top to bottom or left to right — it
has perfect double symmetry. Ξ , on the other hand,
only stays the same when inverted top to bottom. When
we flip it left to right, it goes from Ξ to \mathcal{E} . While
 Ξ is the normal orientation of the graph, in archaic
instances, it sometimes does get written down as \mathcal{E} .

3. Dr Fitzgerald-Huber's tel. # is 617-495-1585,
Her husband, Horst Huber, has the office tel. #
617-496-6008 & email hwhuber@fas.harvard.edu

I'll write again after talking to Fred
Hibert & finding the old report on the second
lignite sed.

VHM

Dear John,

without too much trouble,

I'm happy to report that I found the Tarim jet seal in an old Chinese-Uyghur archaeological album that I bought in a Tokyo used and rare bookshop about half a dozen years ago. A photocopy is enclosed. You can see that it is basically strikingly similar to the Anan seal.

The Tarim seal was excavated (I'd better say "found" ^{in 1959}) the Chinese reports have chutis [came out of the earth] at Niyä, which lies around the middle of the southern branch of the Silk Road skirting the Taklimakan Desert. The site lies ^{south of the desert} about 100 km north of the modern county seat of Minfang. Niyä flourished from about the 2nd c. BC to the 4th c. AD. It was probably preceded by smaller and more ephemeral communities. By the 7th c., it was completely deserted.

The Niyä seal has four characters which, in their modern form, would be written as 司禾府印 si he fu yin. This means roughly "Seal of the official grain storehouse" or, perhaps more precisely, "Seal of the storehouse of the officer [in charge] of grain." The characters are clearly written in the small seal script, which dates to the latter part of the 3rd c. BCE and would have been used for seals throughout the entire time-period of the occupation of Niyä.

The characters for "officer [in charge] of" 司 and "seal" 印 are perfectly written in their small seal forms. There are only slight problems with the character for "storehouse" 廩, whose small seal form is 𠩺, but the character ^{for} "grain" 𥽿 aberrantly has a perpendicular line running along its right side. This ^{apparently} cannot have been intended as the long stalk extension (reminiscent of the corresponding graph on the Anan seal) because that is obviously seen to bend to the left, which is perfectly normal for the graph in the small seal script. Chinese scholars would explain the discrepancies as due to the seal having been carved by semi-literate people far from the center of Chinese culture. Qin Xigui, who accepted the reading of 𥽿 = 𥽿 ("grain") when I spoke to him in Beijing (he was working only from memory at the moment), is now more troubled by the form of the graph and is no longer certain that it really is 𥽿 ("grain"). I still maintain that it is indeed the graph for 𥽿 ("grain") and believe that the perpendicular line at the right is the result of confusion over the orientation and function of the seal inscription. This will be explained later in the present letter.

As remarked above in this letter, the Anan seal and the Nijia seal are startlingly similar. Both are made of the same material, jet, a dense variety of lignite formed by submersion of driftwood in mud at the bottom of a sea floor. Jet is actually a kind of carbon and will burn. It takes a high polish (which is why it is sometimes used

as a gemstone), a characteristic that will take on significance later in my analysis. Jet is an extremely soft stone, hence easy to carve — yet keeping sharp edges where it is incised, but also easily chipped and broken. (Both the Nijā seal and the Anan seal are damaged at the edges, especially the latter.) This fragility means that seals made of jet are not very practical for repeated impressions, certainly not as stamps on hard surfaces. Since the inscriptions on both seals are incised, they were not intended to be inked and pressed on a hard surface. Rather, they would have been applied to a soft material, such as clay or wax, that would display the inscriptions in relief. Even so, it would have been easy for seals made of jet to chip off at the edges (as happened with the Anan & Nijā seals), so one suspects that such seals were as much (or more) tokens of status as they were useful marking devices.

Both seals are of almost the same dimensions (1.3 cm X 1.4 cm for the Anan seal & 1.57 cm [high] X 2 cm [along the sides] for the Nijā seal).

Both seals have a perforated boss on the back, which means that they could be suspended from a string. Incidentally, Indus Valley seals also have similar bosses and are made of an even softer material, steatite (also called soapstone), which can be marked with a fingernail.

Most amazingly, both seals seem to have to do with

grain administration. There are Thousands of graphs in the Chinese writing system. Not only do these two seals have a comparable number of graphs similarly arranged (3 for the Anan seal and 4 for the Niyä seal), it is astonishing that they share the identical graph for grain.

Considering all the possible variables for seals and seal inscriptions, we may safely declare that the Anan seal and the Niyä seal could not have arisen independently by sheer chance, but that they must be related in some fashion. This is where the difficulties begin.

Qui Xigui, in a fax of June 8 that he sent to me, had stated that "There ^{apparently} ~~is~~ ^{no doubt} that both [seals] belong to the Han Dynasty. As ^{to} ~~whether~~ ^{question} whether they belong to the Western Han or the Eastern Han, it is still difficult to ~~the~~ determine. However, even if they belong to the Western Han, it must be the latter period of the Western Han." I'm pretty sure that most Chinese scholars will follow suit in interpreting both seals as essentially products of the Han Dynasty.

But wait a minute! Didn't Fred Hiabert find the Anan seal at a site that is approximately 3,000 miles to the west of the Han capital and roughly 2,300 years earlier? How can we conceivably speak of the Anan seal as a product of the Western Han Dynasty?

This is a conundrum of gigantic proportions and utmost importance. The Anan seal may be tiny (about the same size as my thumbnail), but its implications are vast. If it really dates to 2300 BC, then we will have to rethink the origins of the Chinese script. If it dates only to the Western or Eastern Han, then we will not only have to explain how it ended up in a late 3rd millennium BCE context, we will also have to explain how it travelled thousands of miles and was deposited at a site that had been completely deserted for centuries (the South Mound of Anan, where the seal comes from, was occupied only from about 3000 BCE to 500 BCE). Despite its minuscule proportions, we must take the Anan seal with the utmost seriousness, for many weighty questions concerning the development of civilization in ~~the~~ East Asia and East Asia hinge upon it. Furthermore, the Anan ^{seal (and its inscription)} is no longer a totally isolated find. We now have the Nijia seal with which it must be compared and contrasted.

Because of the weighty consequences of the almost feather-light Anan seal, I ~~will~~ feel duty-bound to pursue all pertinent issues surrounding it fully and without any preconceptions.

The first topic that must be addressed is the dating of the seal.

The Dating of the Anan Inscription

So much depends upon the accurate dating of the Anan seal. Did the graphs on it, and the very form of the seal itself, migrate from east to west or from west to east? I promised that I would press Fred very hard on the dating of the Anan seal, and I have now done so. All together, I grilled him ^{on three occasions} for a total of more than two hours. His answers have been exceptionally detailed and forthright.

I wish to state at the outset that I have the highest regard for my young colleague. He is not a rising star; his star has already risen, and deservedly so. We already know Fred's great achievements — I do not need to recount them here. Suffice it to say that I firmly believe he will become one of the most renowned archeologists of the 21st century. His discovery of the Anan seal will be counted as one of his major accomplishments.

Fred patiently explained to me his grounds for dating the seal to 2300 BCE. He started with Raphael Pumpelly's outstanding excavations at Anan a century ago. He also discussed Soviet Chronology for Anan and related sites, analyzing why it is approximately five hundred years too low. Fred related the ^{archaeology of the} period when the south mound ^(where the seal was discovered) was occupied ^{for a} to the period of occupation for the north and east mounds. His dating of the level where the seal was found is securely determined by the types of pottery and bronze artifacts at the same level, plus four C14 dates. The dating of that level to 2300 BCE is solid.

I then raised with Fred the sensitive issue of the possible intrusiveness of the seal into the 2300 BCE level. After investigating the matter in exhaustive, almost excruciating detail, I must conclude that the possibility of intrusion is virtually nil. Some of my reasons for coming to this conclusion are as follows:

1. Fred and his crew were already 2½ meters down in their shaft. All the way down they were finding clean levels with perfectly coherent assemblages. The 2300 BCE level where he found the seal had a particularly good floor with the walls ^{of a room} and a road out front.
2. Unlike his Soviet and post-Soviet colleagues who move kilometers of earth with their bulldozers and backhoes, Fred was doing intensive, American-style excavation. He was removing ~~at most~~ a spadeful of dirt at a time. What is more, Fred was sifting through the dirt that he did remove. centimeter-by-centimeter
3. Fred was being particularly attentive to the possible presence of rodent holes, which would be the most likely cause for intrusion in this sort of situation. He was not finding any. Ditto for water erosion.

I asked Fred about the precise circumstances under which the seal came to his attention. He told me that his crew was digging in a corner of the room. The dirt.

They removed was taken a short distance away, to a sifting ^{screen} with ^{stand} operated by two local boys. They were using a ^(being about half in inch square) $\frac{1}{4}$ " mesh, so the seal was caught above the screen, as it should have been. The screening was a hot, dusty job, and even though Fred kept enjoining the boys to be attentive to all bones, clay lumps, and objects showing evidence of human modification, they must have mistaken the dust ^{laden} seal for a pebble, and it got tossed out on the backfill pile. Fortunately, Fred's sharp-eyed assistant, Murad Kurbanzakhatov, spotted the seal on the pile and called it to the attention of Fred, who was standing nearby. At first, Fred was a little disappointed because he thought it might be a Harappan seal, which is not what he was expecting to find amidst ~~the~~ his otherwise independent and integral cultures. Later, Fred washed the ~~stone~~ ~~seal~~ seal and put it in a collecting bag. Nice piece, but not yet a sensation. Fred and his colleagues were finding many other excellent objects during that season, so they did not make a great fuss over the seal right then and there.

I proceeded to ask Fred a most ticklish question: could Murad have planted the seal on the backfill pile? Fred respected my need to ask the question and was not indignant when I posed it. He informed me that Murad is a professional archaeologist of great experience and holding a Ph.D. from St. Petersburg. There would simply be no

Motivation or incentive for him to do such a thing. And where would he have gotten a piece of such antiquity, authenticity, and appropriateness?

Furthermore, as Fred can outline much more extensively, it makes good sense for a stamp seal of this sort to show up precisely at the 2300 BCE level. Comparable stamp seals (square and with perforated bosses, though with symbolic designs rather than the sort of writing on the Anau seal) have been found for this time period in the Bactria-Margiana Archaeological Complex and surrounding areas (e.g., Dittyn Tepe). Also, says Fred, we would expect to find writing in areas peripheral to Mesopotamia and Egypt at this time. Literacy, especially in Mesopotamia, was expanding beyond the scribal class during the 2nd half of the 3rd millennium BCE. People in various places in the Middle East were experimenting with writing for their own languages.

Further Paleographical and Philological Considerations

The script on the Anau seal seems to be of a different sort of graphic system than the isolated marks on pottery and figurines that are found scattered across the Iranian plateau during the second half of the 3rd millennium BCE. I have been noticing such signs in the archaeological literature for the past fifteen years or so. They tend to look like asterisks, stars, and so forth, plus they often have series of parallel pro-

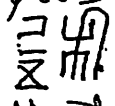
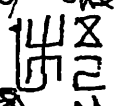
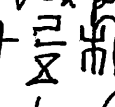
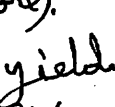
jections stemming from their main lines. The graphs on the Awan seal are simpler in construction and, furthermore, they are three in number, clearly constituting a sequence.

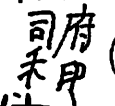
The Awan graph for "grain" looks a little more like Chinese bronze forms than like oracle bone forms because of the way the spike bends way over and the angular shape of the leaves and roots of the plant depicted. With the oracle bone script, there are just straight lines \times . The oracle bone ^{forms} are older than the bronze forms, but the difference in shape may be due to the media employed (wax molds for the bronzes versus the hard surfaces of the oracle bones).

The graph for "storehouse" 𠩺 had not yet been identified on the oracle bones. on the Niyā inscription

The small seal form of the graph for 𠩺 ("record") would have ^{had} an added silk radical, thus 𠩺, not merely 𠩺 as on the Awan seal. This is evidence that the Awan inscription predates the 3rd c. B.C.E. Similarly, the extremely long extension of the stalk with a clearly marked spike near the end is an earlier form than the small seal 𠩺.

We now have to confront the tricky question of the orientation and function of the inscriptions on the Awan and Niyā seals. I now accept Profes-

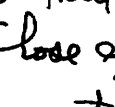
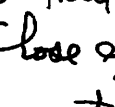
see Qiu's suggestion that the Anan seal should be viewed as  rather than  (the way it has been pictured in publications heretofore).[⊗] Now, if we look at  in the mirror, we see , yielding a perfect form for he ("grain"), a perfect form for wu ("five"), and a reversed ji ("record") at what has now become the top right. This is how a raised impression would appear ~~broken~~ ^{if} the seal were applied to a soft, malleable material such as mud, clay, or wax. The Anan seal inscription is, thus, likely to have been engraved in reverse/mirror orientation.[⊗]

The Nijia seal inscription, however, is clearly engraved with normal orientation:  (using the modern forms of the graphs for easy legibility). If this were impressed on a soft, malleable material, the resultant raised characters would be in reverse/mirror orientation. Thus, the Nijia seal inscription must actually have been intended for use as a seal model/mold/pattern.

I suspect that the anomalous perpendicular

⊗ So as to yield impressions in their correct orientation.

⊙ But still acceptable in its reversed form.

⊗ Prof. Qiu no longer accepts that  necessarily means he ("grain"). He draws the graph thus: . Close examination of the available photographs, however, reveals that there is extensive damage in what I now consider to be the top right corner of the seal. The break in the central stalk and the rightward curvature of the upper (11) right arm are illusory results of the damage.

line to the right of the graph for grain (𥽿) may have been due to confusion over which direction the central stroke should bend. Note that, on the Anan seal inscription, it bends down perpendicularly all the way to the right (𥽿).

The term/Title (of official position) ~~Si he fu~~ Si he fu (Storehouse of the official [in charge] of grain) does not exist in Chinese history books or bureaucratic rosters. I believe, therefore, that the tradition of carving lignite seals having to do with grain administration was a Central Asian practice. There is no doubt whatsoever, though, that the Niyi seal is carved with small seal forms of the characters that were current in ~~the~~ the heartland of China during the Han Dynasty.

Conclusion

I do not claim to have deciphered ^{*}the Anan script because we obviously do not have the entire script yet. One seal inscription with three graphs does not a script make! What I do believe that I have accomplished, however, is to provide a useful framework for understanding discoveries relating to this most intriguing artifact. ^{future}

* Since its publication in the Philadelphia Inquirer and the New York Times, Fred has received many unsolicited "decipherments" of the Anan seal inscription. (2) Based on numerous different languages and scripts.

Bibliography for the Niyā seal:

See Wenwu, 6 (1960); 7-8 (1962); 7 (1975); and 9 (1984).

the relevant portions of
A good summary of all these articles may be found in Wang Rencong 王人聰, ed., "Xinche lidai xiyin ji shi [Collected Explanations of Newly Unearthed Seals from Successive Dynasties]" 新出歷代璽印集釋, Xianggang Zhongwen Daxue Wenwuguan zhuankan [Special Issue of the Museum of Hong Kong Chinese University] 香港中文大學文物館專刊, 3 (1987), p. 55 and "Xin

ACKNOWLEDGEMENT

I wish to thank Professor Jiu Xigui for meeting with me in Beijing to discuss the Anan seal inscription and for helping me to locate references to the Niyā seal inscription. I am also grateful to Dr. Fred Hiebert for sharing his exciting find with me and for answering my countless questions about Anan.

→ Xinche lidai xiyin ji lu [Collected Records of Newly Unearthed Seals from Successive Dynasties] 新出歷代璽印集錄, Ibid., 2 (1982), p. 86.

1. In the same room in which he found the Anan seal and in close association with it, Fred also gathered a number of clay balls about an inch or two in diameter. It is likely that the balls were used for accounting purposes in keeping track of grain transactions.
2. The engraved portion of the Anan seal is colored with a red pigment. There has been speculation that this is ochre or cinnabar and that it has ritual significance. Fred thinks it is more likely that it is hematite or some other ferrous material that was used to polish the seal to a high sheen. His theory is persuasive, since the red residue has also clung to the damaged part of the graph for "grain." Still, only chemical analysis will provide a conclusive answer to the nature of the red coloring in the Anan seal inscription.

* 3. I'm very troubled by how closely the Anan seal and the Niyä seal resemble each other (stamp seals with perforated bosses, polished light, about same size, about same number of characters in a similar arrangement, both seem to have to do with grain administration, both with Chinese characters and yet both so far away from China — and no models for this type of grain administration seal in China proper) and yet how distant they are from each other in time! What's going on here? Could the Niyä seal be much earlier than the Han Dynasty (which Chinese scholars, not without reason, [Niyä

is primarily a Han period site — it was known to the Chinese of the time as ^{the country of} Jingyue; the shape of the seal; the small seal forms of the characters (assume it to be)? We must remember how small these seals are — almost small enough to slip through a screen with a quarter inch mesh, and easy to be mistaken for a ^{dust-covered} mere pebble even when caught in the screen with other stones, dirt, and debris. Even with the careful techniques of modern archaeology, little seals like this are liable to get tossed out with the backfill. Maybe there were a lot more seals like this in Central Asia, and now that Fred ^{has} caught one — plus the extraordinary match with the find from Niya — excavators will be all the more careful, with the result that more will start turning up.

4. It's not so odd to find Chinese characters at Niya; *
 * [certainly not for the Han Dynasty, but it is absolutely *
 mind-boggling to find them at Anan at 2300 BCE. I am convinced, as are Professor Qiu and other excellent paleographers, that the inscription on the Anan seal bears graphs that are Chinese characters (their view) or are closely related to the Chinese writing system (my view). But what is the nature of that relationship?

5. The Chinese script is usually thought of as evolving through the following ^{early} stages: oracle bone inscriptional forms (roughly late Shang [1200-1045] ^{BCE}), bronze inscriptional forms (roughly Zhou), small seal [Qin and Han]. Is it pos-

sible that the small seal form of the script (as on the Niyi seal) could have evolved earlier? That does not seem likely, since it was the result of Qin reforms of earlier "big seal" (da zhuan) forms. In other words, the progression of the Chinese script (oracle bones, bronzes, big seal, small seal, and so on) seems to be a natural one (the evolution of the forms from archaic to developed is evident). So we are stuck with the Niyi seal really being a Han period product, albeit out there in Eastern Central Asia. It's very hard to wedge it back closer in time to the Anan seal. Even though geographically Niyi & Anan are both out there in Central Asia with large, temporally there's an enormous gulf between 2300 BCE & 100 CE/AD. And yet I think it's fairly obvious that these two seals belong to the same tradition. This assumes an impressive degree of continuity over more than two millennia. But such things do happen, and right there in Central Asia. I really must close now (I have other work to do!) and will do so with one very convincing example of the continuity of culture in Central Asia. At Loulan (Korazain/Korair), we find pointed felt hats with feathers stuck in them and cords wrapped around them (uncannily resembling Alpine hats in these respects) from 1800 BCE to around 100 CE/AD.

The implications of the Anan seal inscription are vexing. I have lost a lot of sleep over this pretty little piece of black stone and will undoubtedly lose a lot more.

Yesterday, I met with Fred again for a long talk. When I showed him photographs of the Nijzi seal, he was stunned at how similar it is to the Anan seal. We spent the next hour and a half talking about the relationship between the two seals and, once more, reliving step-by-step the moment and exact circumstances under which the Anan seal was found.

Fred showed me dozens of slides of the excavation site. I have now become so familiar with the surroundings that I feel as if I have actually been there myself.

The walls and floor of the building from which the seal emerged are very solid, as is the earth which covered everything to a depth of 2.5 meters. I saw absolutely no evidence whatsoever of intrusion due to water, birds, or rodents.

Fred "introduced" me to Volodya, who was in the room excavating when the seal was brought out, and to Merdan, who was manning the screen when the seal was caught in it and tossed over onto the backdirt pile.

Murat, Fred's colleague, was driving back from town where he had gone to take care of business relating

to the excavation. He got out of his car and was walking by the backdirt piles on his way to the mound. As Fred recalls it, the time was in the forenoon, not long before "second breakfast" (The crew gets up early and, after "first breakfast," starts to work around 6 a.m. to avoid the worst of the heat).

Murad is an exceptionally conscientious archaeologist, as is Fred, so they were in the habit of enjoining the screeners to be careful not to toss out any artifacts (no matter how fragmented) or bones onto the backdirt piles along with unwanted pebbles and useless clumps of soil (they were actually supposed to break even these up so that anything solid that was over $\frac{1}{4}$ " \times $\frac{1}{4}$ " would remain in the screen for careful inspection. ^(above)

Murad leaned over to inspect the backdirt pile. The soil was still slightly moist, hence it must have only recently been brought out in a bucket from the excavation. He spotted the seal and, chiding the screeners for tossing it onto the backdirt pile, called Fred — who was standing nearby — over to take a look. Fred distinctly remembers that, not only was the seal all dusty when he first held it, it was also partially encased in the dirt matrix that surrounds everything at the site. This fact is crucial — the seal could hardly have come from an antiquities market in that condition! To the hot and tired screeners, the seal must have looked like nothing more than a dirt-

encrusted pebble. Certainly it was not shining when Fred first received the seal from Murad. It was because he wanted to get a better look at the seal that Fred took it over to the irrigation canal and washed off all the caked-on dirt. Realizing that he had discovered a stamp seal, Fred was naturally pleased (especially because it was so pretty and gleaming), but he was — at the same time — disappointed because he thought he had come upon a Harappan or Harappan-like seal, and that is far from what he would have expected to find at Anau circa 2300 BCE.

After my third Marathon session with Fred, I immediately called Naomi Miller — at his suggestion. Naomi is a research specialist in the world-famous Museum Applied Science Center for Archaeology (MASCA) at Penn. She is much sought after by expedition leaders (not just from Penn) who rely upon her expert identification of paleobiological materials. Naomi has vast experience and the most impeccable credentials. She was present at the site in late May — early June when the Anau seal was discovered. As usual, she was working in her flotation shed, extracting seeds and other lightweight materials from sample buckets of soil. Her recollection of the discovery of the seal dovetails per-

fully with Fred's.

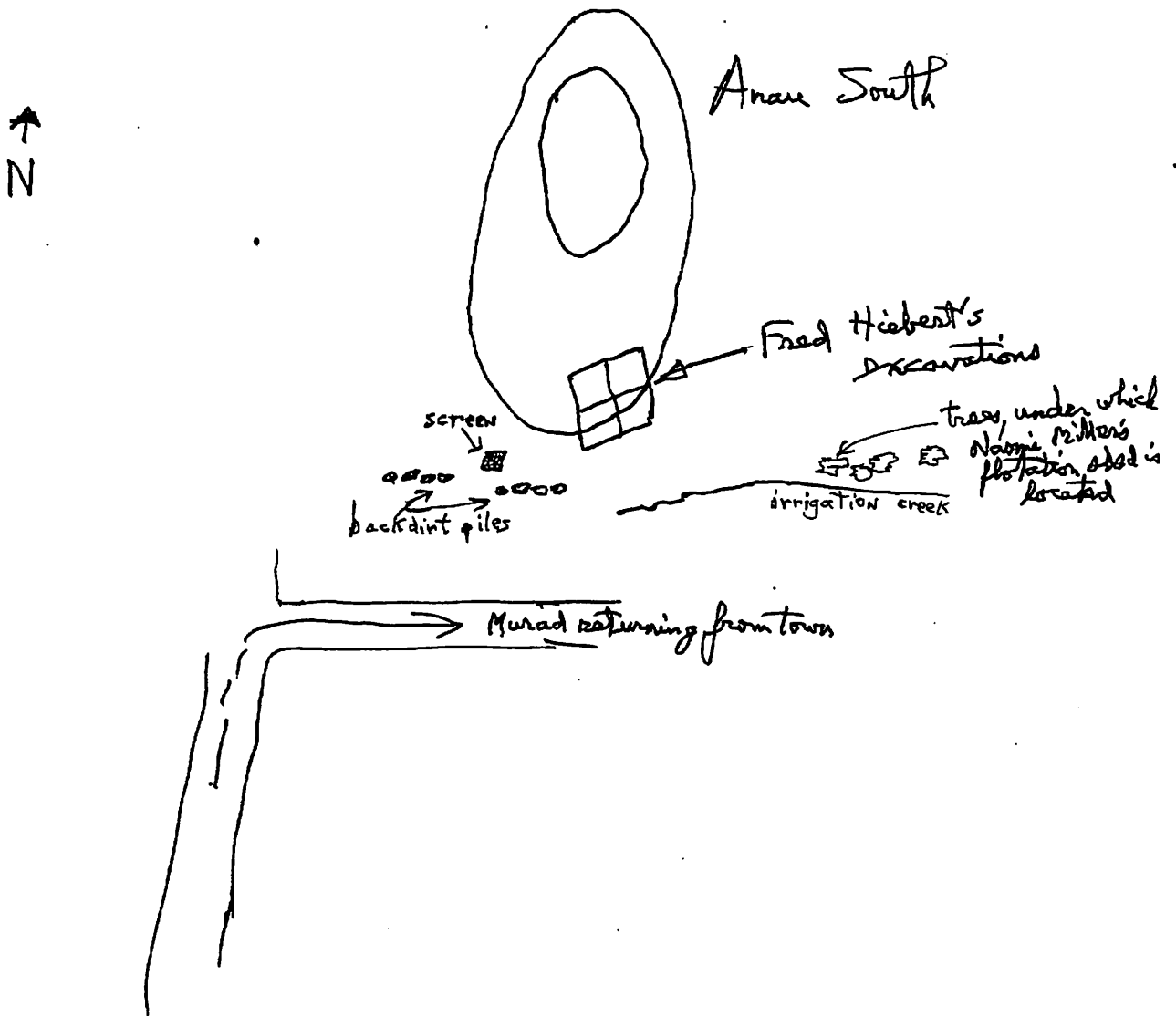
Naomi described Murad as a highly professional and honorable archaeologist who could not conceivably have planted the seal on the backdirt pile. She described Murad's ^{reports of his} excavations of the North Mound twenty years earlier as being of such excellent quality that Fred's expeditions from 1994 to 2000 were able to rely on them with complete confidence in making correlations with ~~the~~ ^{their} own work.

After I told her about the Niyi seal and Chinese-like nature of the writing on the Anau seal, Naomi also volunteered the possibility of intrusion. However, she was intimately familiar with the stratigraphy and the tellurian features of the site. In her estimation, the Anau seal came from the 2300 BCE level and properly belongs with it. I have to trust Naomi, because I know her to be a scientist of unerring judgement and awesome reputation.

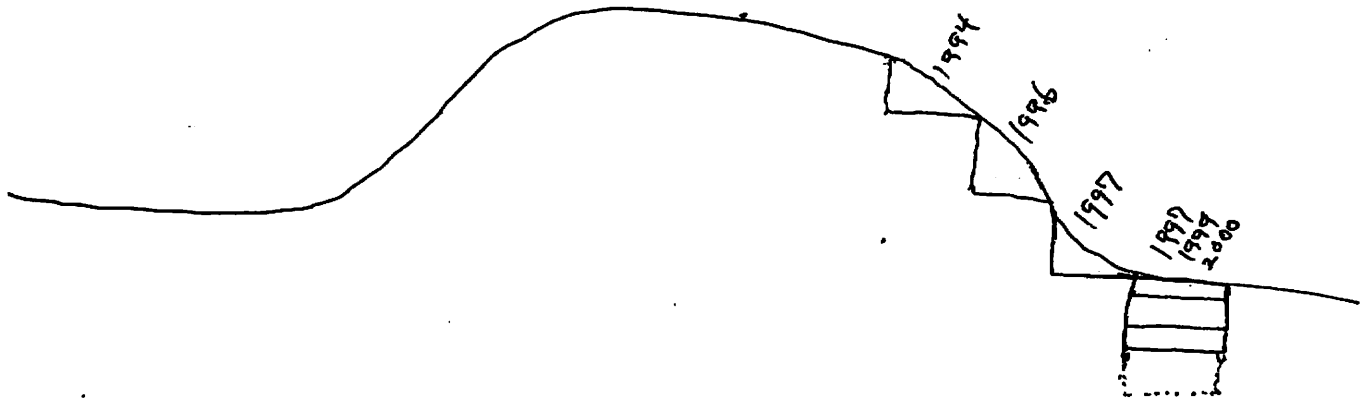
Considering all of the evidence that I have been able to assemble during weeks of investigation, I can only conclude that the Anau seal must really date to 2300 BCE. Since the inscription it bears is inescapably linked to the Chinese writing system, which hitherto was known only to have arisen 1200 years later and thousands of miles to the east, the Anau seal forces us to rethink — in a most radical fashion — the origins of the Chinese script.

Sketch of Site
(very rough)

39



Kepet Dag(h) Hills



Anau South (side view)

Fred Hibert's excavations
1994 - 2000

Raphael Pumpelly's trench of the early twentieth century was higher up on the mound. A large water tank now rests upon it.

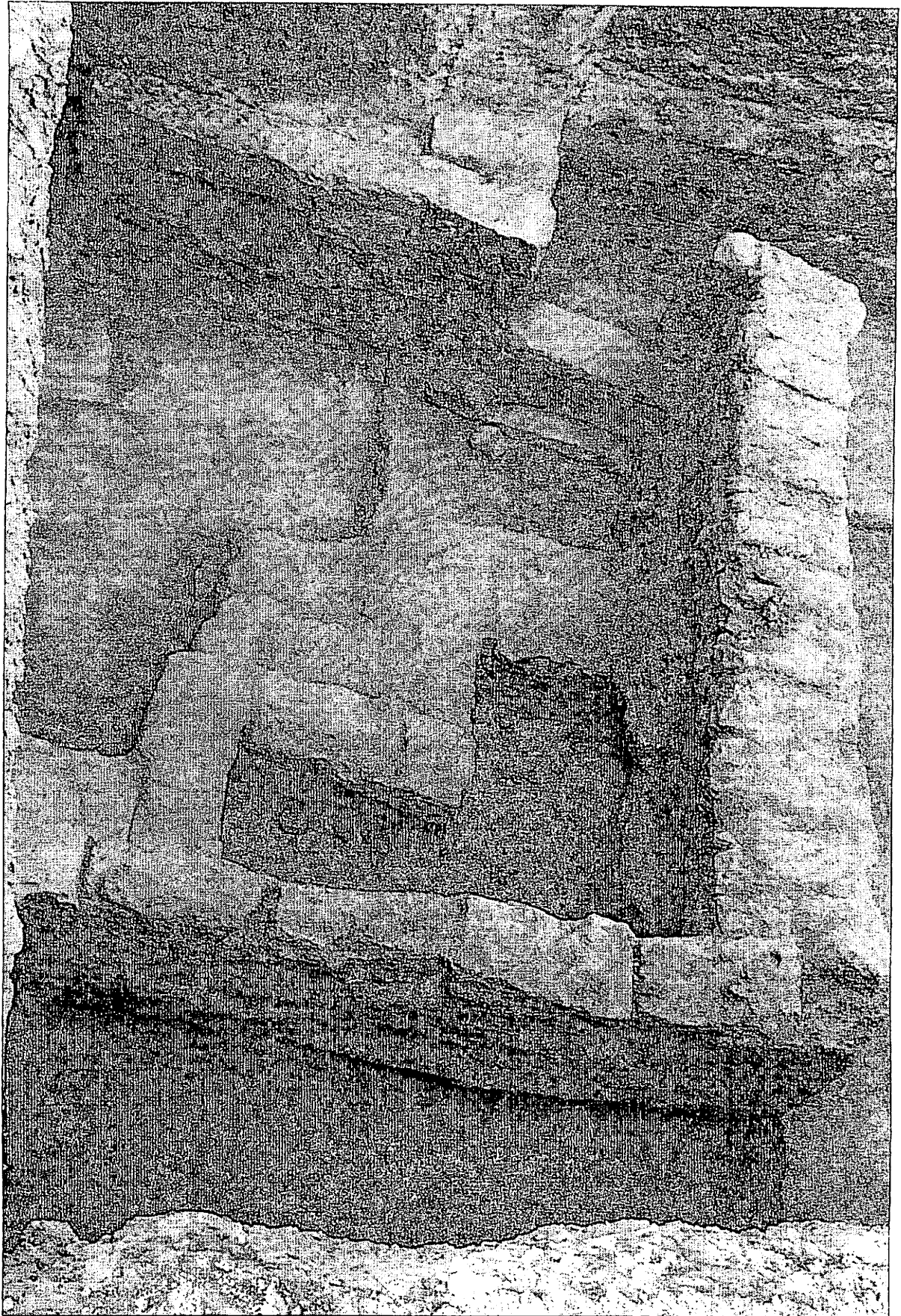
On the following page is a photograph of the room in which the Awan seal was found. The exact spot is marked by the intersection of the two solid arrows in the upper left corner. The intersection of the two dotted arrows marks a nicely finished threshold stone. The large, sun-dried bricks are also well formed. The high quality of the construction is evident throughout.

In the same room with the seal were found a number of clay accounting balls.

Running along the outside of the building (i.e., the right side of the photograph) was a road.

It is clear from this photograph and from the many other photographs of the site ~~that~~ I have seen that the earth is very solid. Even with a magnifying glass, I could detect no evidence of rodent holes, bird tunnels, or damage from erosion. It is virtually impossible that the Awan seal could have worked its way down through 2.5 meters of hard-packed soil from the surface (500 BCE). Even if a wandering Chinese grain merchant ^{descended} since (very far from home!) had decided to climb up on the mound in, say, 100 CE (for a better view?) and (in)conveniently lost his stamp seal, I still don't think there's any chance that the seal could have ended up at the 2300 BCE level where it was found.

42



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Dimensions: 1024 x 1536 pixels

Courtesy of Fred Tiebert

1. The discovery of the Anan seal inscription is, in a way, disorienting. Although, to me personally, it is not at all unexpected, it will be very difficult for many scholars to come to terms with; historians who specialize in the origins of Chinese civilization and, especially, Chinese writing; students of the history of writing in general; specialists on Central Asian and Middle Eastern civilizations; and so on.
2. Like the Harappan script, the Anan script may have been largely limited to seals.
3. Although the oracle bone script appears to have been a fully developed writing system, it was restricted exclusively to divination.
4. Jet is apparently not a common substance for seals. The only two Fred Hiebert knows of are the Anan seal and the Nijä seal.
5. The characters on the Anan seal are extremely well formed and stylized. They do not look primitive or pictographic, although - in comparison with the characters on the Nijä seal - they do appear to be relatively archaic. As I stated the very first time when asked by Fred, the Anan inscription represents a stage of writing that it is relatively advanced. This is not writing at its very earliest stages,

when it is just emerging from pure pictography and ideography. Although the Anan script is still ^{syllabic} ~~a syllabic~~, the graphs are fairly simple and linear. This is not a writing system that had just been invented out of whole cloth. It undoubtedly has a background of its own.

6. The BMAC and other Bronze Age civilizations of Western Central Asia (e.g., Namazga) are replete with isolated symbols that are found on pottery, figurines, spindle whorls, amulets, and other objects. Such symbols are usually either quite complicated (with many strokes) or very simple (with just a few strokes—two or three). They seldom have a middle ground of 4-7 strokes as do the graphs on the Anan seal. In any event, the Anan seal provides us with a glimpse of a script that was hitherto completely unknown for Central Asia.
7. It is obvious even to the neophyte that the Anan script is unrelated to the Harappan (Indus Valley) and proto-Elamite scripts, its closest neighbors in time and space. The roots of the Anan script lie elsewhere.
8. When Fred showed the Anan seal to Robert Dyson, former Director of the University of Pennsylvania Museum and a distinguished archaeologist of the Iranian Plateau, Dyson told him, "Good job, Fred! Now go out and find a hundred more like it." In a sense, that is good advice. To document securely the existence of the Anan

script and provide ample materials for its decipherment, many more examples will have to be adduced. Nevertheless, I commend Fred for publicly announcing his discovery of the Anan seal, for it will cause archeologists to be all the more attentive to dirt-caked and dust-covered little stones that may actually be further precious evidence of lost civilizations. And it will also cause scholars to reassess materials in museum collections and in old publications that have not yet been fully understood, such as the Nijia seal.

9. The Anan seal will surely add fresh fuel to the fires of those (viz., some of the Nostraticists) who believe that Sinitic and Caucasian are related. [⊗] I myself am skeptical (although not entirely dismissive) of the Sino-Caucasian hypothesis, since the earliest identifiable loans into Sinitic that I can discern (presumably dating to the early or mid-second millennium BCE) are overwhelmingly Indo-European. A close connection between Sinitic and IE also fits the pattern of archeological and cultural flow from the steppes and down into China at this very

⊙ hold that they were Indo-Iranian, but not all scholars would agree that this is indeed the case.

⊗ Because it puts something Sinitic-looking at a place that is not unimaginably distant from the Caucasus and at a time that would be roughly appropriate (although perhaps a millennium or two too late for common identity) for them to have diverged from a single parent. Unfortunately, we have no idea what language(s) were spoken in the ^③ BMAC. Some Russian archeologists (e.g., Victor Sarianidi), based on cultural characteristics such as, ^{alleged} song preparation, would

period (bibliographical references ^{available} upon request, but see especially International Review of Chinese Linguistics, 1.1 (1996)). However, the linguistic matchups between Sinitic and IE are borrowings, not cognates, so Sinitic was probably already formed as a language group by the early 2nd millennium BCE. And it is just possible that, during the 3rd millennium BCE, there may have been a window of opportunity for a Sino-Caucasian condominium. ^{the evidence is very strong that} Still, I believe, writing (as opposed to isolated pot-marks) came to China as part of a cultural and socio-political package that included bronze metallurgy and wheeled vehicles, as well as ^{specific} calendrical innovations, myths, burial practices, advances in weaponry, the royal hunt, patterns of state formation, etc. Furthermore, these changes are associated with movements across the steppes and down into north China during the 2nd millennium BCE when the relevant languages would have been primarily IE. What would have been coming across and down into north China during the third millennium BCE would most saliently have been domestication of ovicaprids and other agricultural practices. These, too, show steppic characteristics (although not necessarily IE).




On Wednesday, June 20, I met with Greg Possehl (Chairman of the Department of Anthropology at Penn and an authority on the Harappan script), Holly Pittman (Professor of the History of Art at Penn and a specialist on prehistoric South-west Asian seals and symbol systems), and Fred Hiebert from 2-4 in the afternoon at the University Museum.

Fred made an outstanding presentation about the background of his excavations at Anau and their progress since 1994. Greg and Holly asked informed questions about the stratigraphy and building levels at Anau. They also pointed out many important correspondences between cultural aspects at Anau and other sites to the east, west, and south.

I came away from our meeting with the following powerful impression: while the civilization at Anau and elsewhere in the BMAC (Bactria-Margiana Archaeological Complex) may bear a relationship to civilizations of Mesopotamia, the Iranian Plateau, and South Asia, its closest ties are with Central Asia. ^{The} BMAC is different. Likewise, the writing on the Anau seal is different from writing in

Mesopotamia (not to mention Egypt), the Iranian Plateau, and South Asia. The meeting of June 20 only confirmed my initial impressions upon first encountering the Anau seal inscription: it cannot be equated with any of the major writing systems of North Africa, Southwest Asia, and South Asia during the mid-3rd millennium.

The characters that make up the Anau seal inscription are part of a script unto itself. The Anau script may have been ^{partly} inspired by some earlier writing system(s), and I believe that, in turn, it may well have inspired the development of writing elsewhere. Still, at this moment, we do not know the precise affiliations of the Anau script. Judging from ^{Anau's} ~~the~~ archaeological, environmental, and historical connections, however, I would suggest that we should ^{a significant portion of} focus our investigation to the northwest, north, and northeast, rather than merely to the southwest, south, and southeast—^{usual} as our cultural predispositions would encourage us. (and the culture of which it is a part)
The most telling linkages of the Anau script may well lie to the east and west instead of to the south.

I have maintained all along, that the Anau script is not closely related to Proto-Elamite, the Indus Valley script, or any of the other well-known writing systems from the 3rd millennium ^{BCE} and early 2nd millennium ^{BCE} that lay to the south. To give an idea of the types of symbols that were used at a relatively close southern site dating to the 3rd millennium BCE, I append here the charts of incised and stamped marks that were found at Shahdad. These are taken from the big book of Ali Hakemi, which was kindly lent to me by Holly Pittman. Although the hourglass sign  does occur (usually oriented as a bowtie ) , as does the sign  (though not with an elongated spike extending from the top and bending all the way over down along one side to the bottom), most of the symbols found at Shahdad are more elaborate (even ^{overtly} pictographic) than the graphs of the Anau inscription. Furthermore, the Anau graphs are extremely well formed. Most important of all, the Anau inscription consists of (at least) three graphs arranged deliberately in such a fashion that they clearly form a coherent group.

ISTITUTO ITALIANO PER IL MEDIO ED ESTREMO ORIENTE
CENTRO SCAVI E RICERCHE ARCHEOLOGICHE

SHAHDAD

Archaeological Excavations of a Bronze Age Center in Iran

ALI HAKEMI

Translated and Edited by
S.M.S. SAJJADI

with an Introduction by
PIERRE AMIET

and a Postscriptum by
SANDRO SALVATORI and MAURIZIO TOSI

IsMEO-ROME 1997

ISTITUTO ITALIANO PER IL MEDIO ED ESTREMO ORIENTE
CENTRO SCAVI E RICERCHE ARCHEOLOGICHE

REPORTS AND MEMOIRS

Founded by GIUSEPPE TUCCI

Editor: GHERARDO GNOLI

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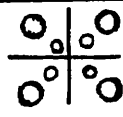


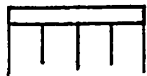






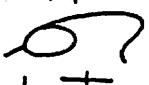


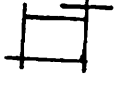
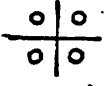





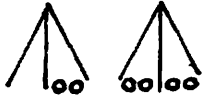



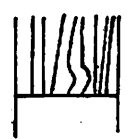

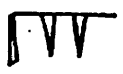


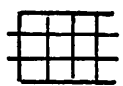
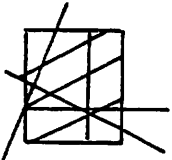

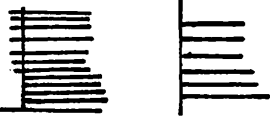





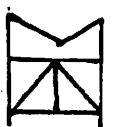
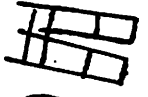


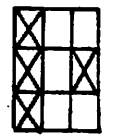

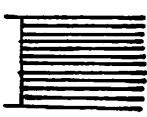

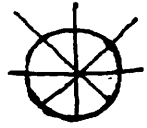


VOLUME XXVII

Ma.1- Incised marks.

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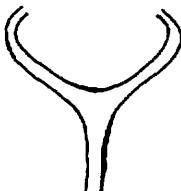

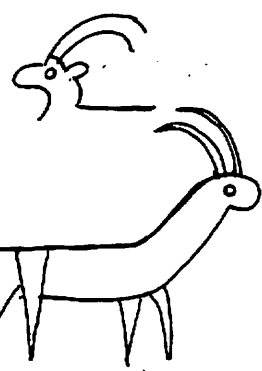

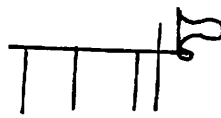
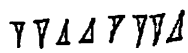
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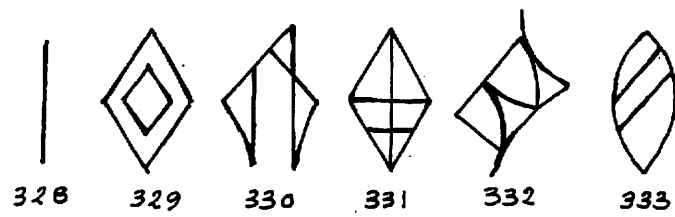
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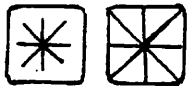
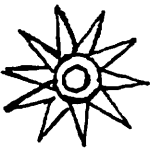
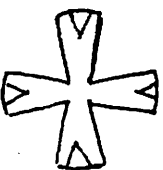


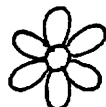

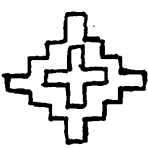


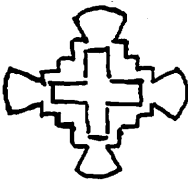
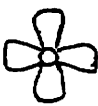
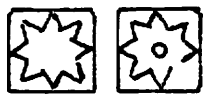
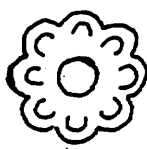


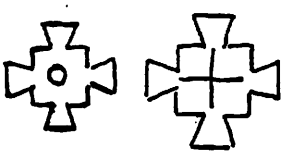

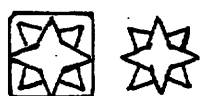
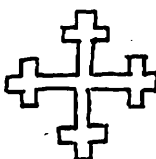



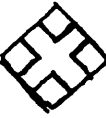
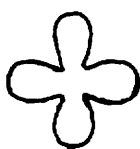
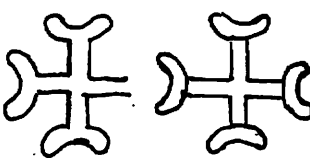


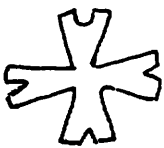


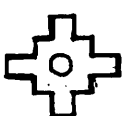
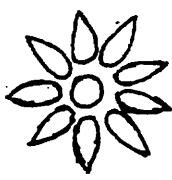
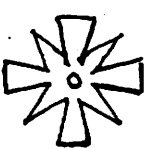
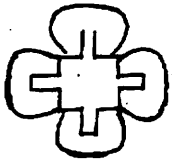
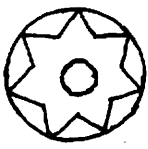

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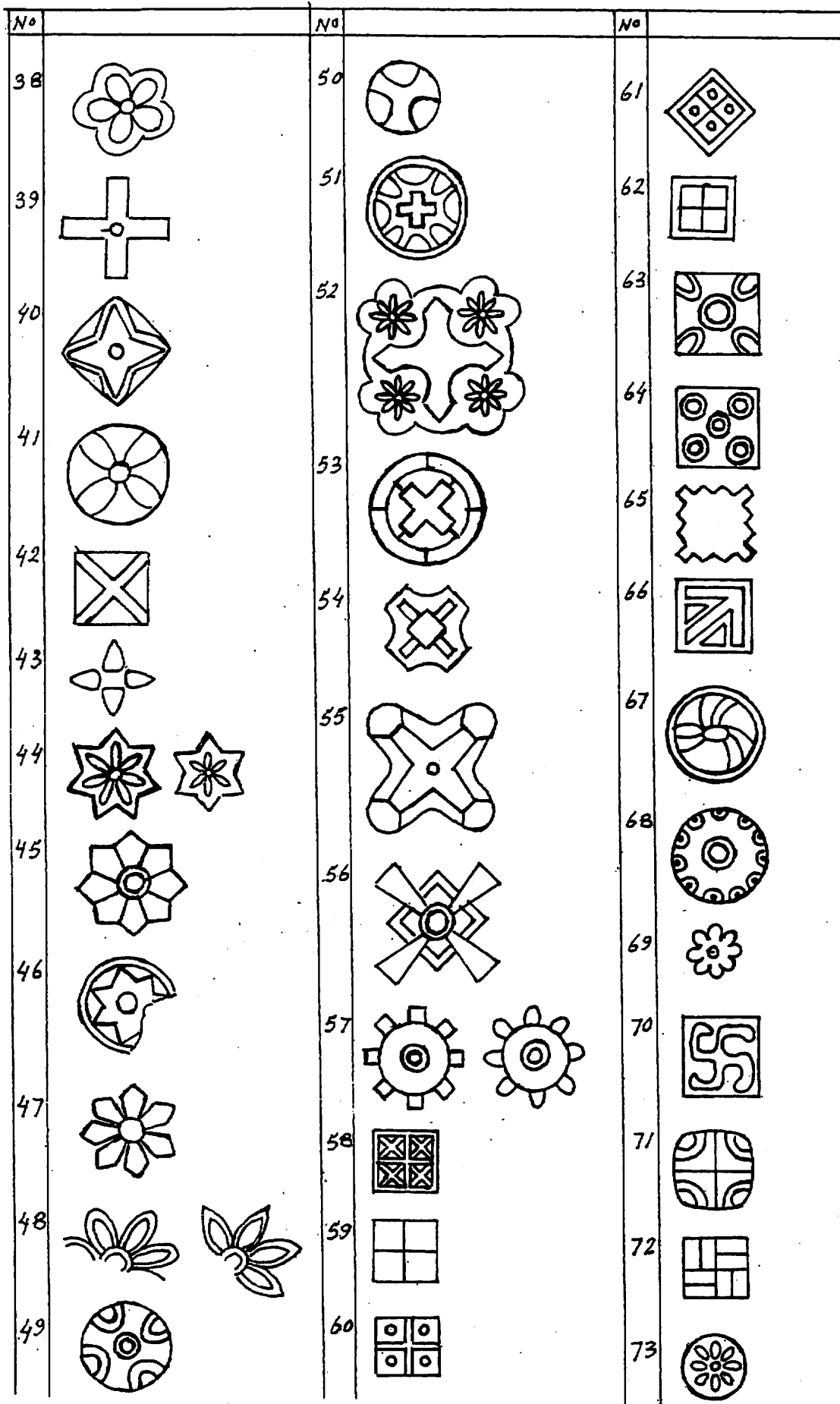
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


















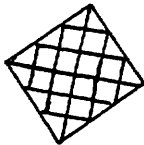





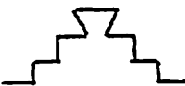
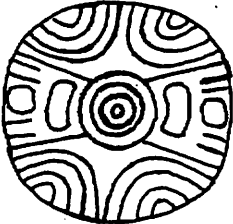








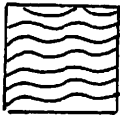
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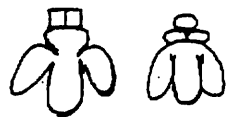





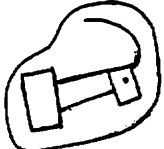








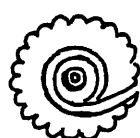
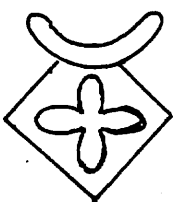







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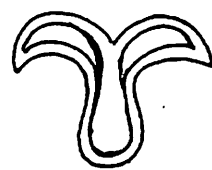












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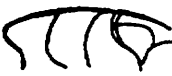
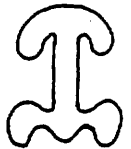








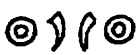














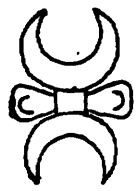


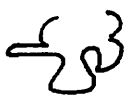









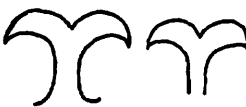









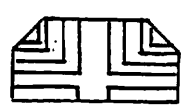



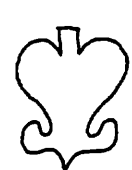















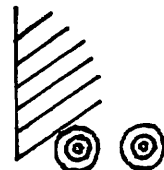

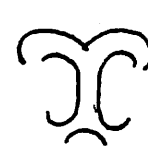





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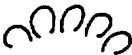






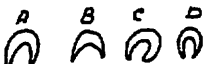




































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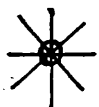


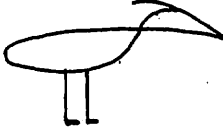
















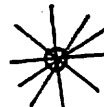






























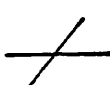


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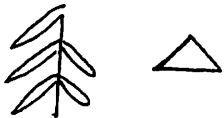
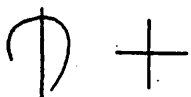

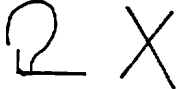

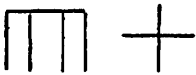

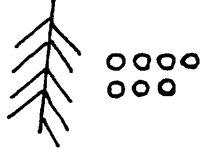






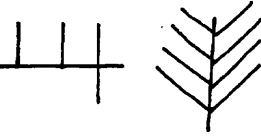

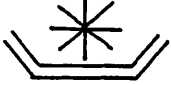
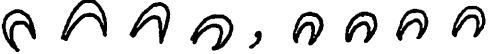
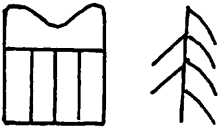

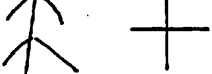

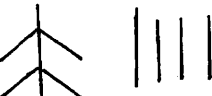
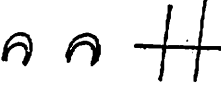






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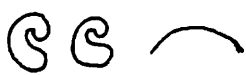
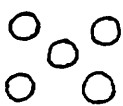
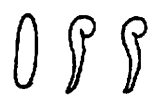
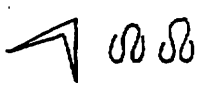
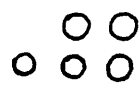
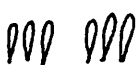
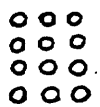

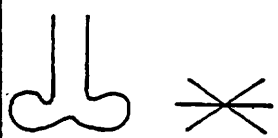
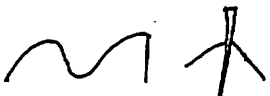

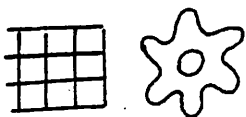







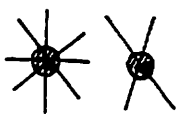

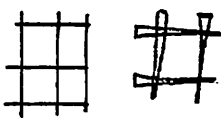

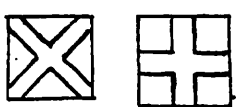


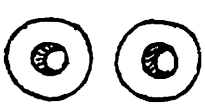
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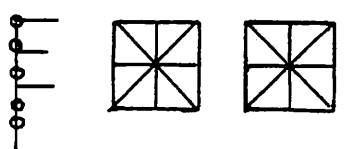

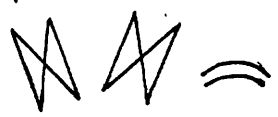
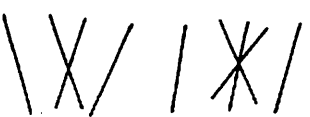
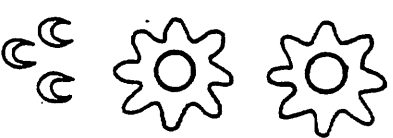
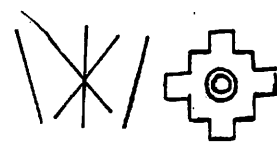



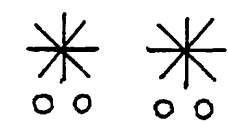

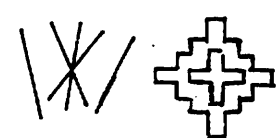






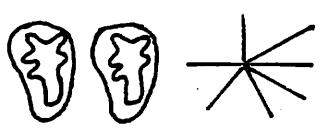


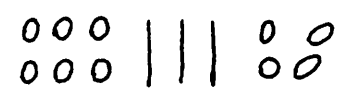

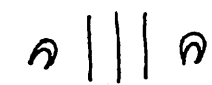
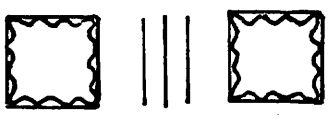
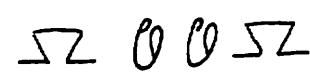
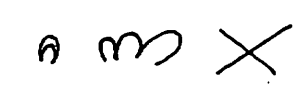
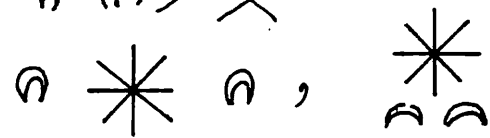
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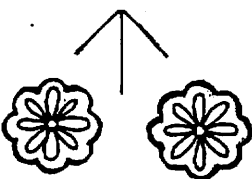

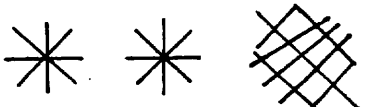
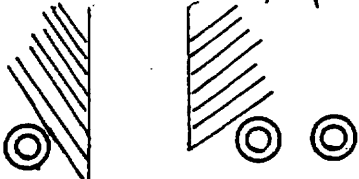

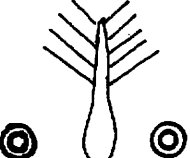
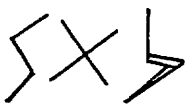

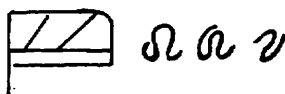
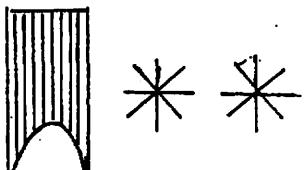



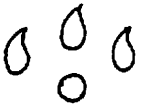
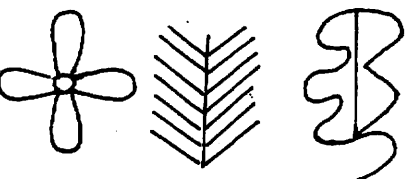

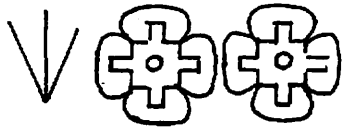



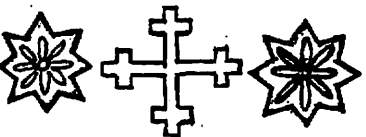


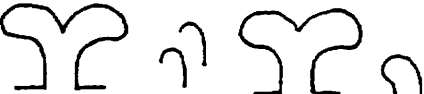
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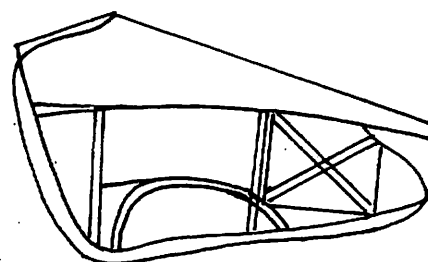
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274



Walther Hinz

Altiranische Funde und Forschungen

Mit Beiträgen von
Rykle Borger und Gerd Gropp



Walter de Gruyter & Co.
Berlin 1969



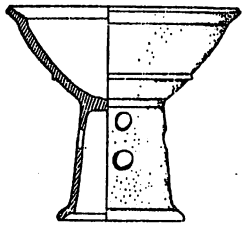
Tafel 4: Altelamische Silbervase mit Göttin Narunde und Inschrift aus der Gegend von Persepolis, heute im Altertumsmuseum zu Teheran.



*Tafel 2: Altelamische Silbervase mit Göttin Narunde und einzeliger Inschrift in Strichschrift (Ausschnitt).
Vgl. Tafeln 1 und 3.*



Tafel 5: Altclamische Silbervase mit Darstellung einer kauernenden weiblichen Gestalt, möglicherweise der Priesterin Kuri-Nahiti. Vgl. auch die Tafeln 1, 2 und 4.



THE ORIGINS

OF CHINESE CIVILIZATION

EDITED BY DAVID N. KEIGHTLEY

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**Recent Archaeological Evidence
Relating to the Origin
of Chinese Characters**

CHEUNG KWONG-YUE
(Translated by Noel Barnard)

As a result of continuing archaeological activities over the past fifty years ceramic vessels and sherds bearing what are termed marks, symbols, or characters have come to light from many sites representative of pre-historic and early historic cultures. I shall simply call them inscriptions, graphs, or marks, without seeking, in this preliminary survey of the materials, to bring into the picture modern conceptions of what constitutes a pictogram, an ideograph, a glyph, a logograph, a symbol, and other such terms.¹ Where radiocarbon dates are available, I date the materials according to the revised (DFLW) calibrations of carbon-14 assessments. I offer tentative assessments of sites not yet dated by carbon-14 tests with reference to the generally accepted datings of comparable cultures; such chronologies are necessarily relative.

**EARLY POTTERY MARKS: FIELD SURVEYS,
1928-1977**

1. Pottery inscriptions from Pan-p'o-ts'un, Hsi-an-hsien (Sian), Shensi: Unearthed between 1954-1957 (CKKH and Shen-hsi 1963).

1. It is appreciated that readers would like to see greater precision than this. My view is that the time is not yet ripe to systematize our understanding of the marks until there is a large enough "vocabulary" resulting from further excavations which may help clarify the role of the marks in the development of Chinese characters. Without more examples of two or more graphs in one inscription (we have only the Liang-chu and the few Wu-ch'eng examples to draw upon) scholars can do little more than speculate.

How did such an advanced culture remain lost?

CITY from C1 that these people had a written language. And the characters engraved in the stone stamp are unlike any ever seen.

"It's not ancient Iranian, not ancient Mesopotamian. I even took it to my Chinese colleagues," he said. "It was not Chinese."

How could such an advanced culture have been so overlooked?

In the 1970s, Soviet archaeologists working in remote deserts west of Afghanistan came upon vast ruins, each one bigger than a football field. All were built with the same distinct fortress-like pattern — a central building surrounded by a series of walls.

By the mid-'70s, the Soviet archaeologists had discovered several hundred of these structures in the areas known as Bactria and Margiana.

But their findings remained little known to the outside world because they had been published in Soviet journals, and never translated.

"I was absolutely stunned," said Harvard archaeologist Carl Lambert-Karlovsky, who knows Russian and who, 20 years ago, first read some of the Soviet literature on this unknown world. He transferred his amazement to Hiebert, who was one of his graduate students.

No one knows the extent of this civilization, which may reach beyond Margiana, deep in the Kara Kum desert, and Bactria, which straddles the Uzbek-Afghan border.

Hiebert believes that a third area, Anau, near the Iranian border, is connected to this civilization, perhaps even the origin of the culture. It is about 2,000 years older, going back to 4500 B.C., or the Copper Age.

A New Hampshire archaeologist, Raphael Pumpelly, had discovered ancient ruins at Anau in 1904, but the site did not receive much attention from the Soviets. Only now, said Hiebert, are all the pieces, once divided by political boundaries, falling into place.



A scientist excavates the site at Anau, near the Iranian border. The city, the oldest of the three desert ruins, dates to 4500 B.C.

gist, Raphael Pumpelly, had discovered ancient ruins at Anau in 1904, but the site did not receive much attention from the Soviets. Only now, said Hiebert, are all the pieces, once divided by political boundaries, falling into place.

Hiebert, 40, had graduated from college with an art degree when he was asked to do some drawings for an anthropologist. He was fascinated by the field and went to Harvard for his doctorate. As an archaeologist, he decided to specialize in ancient trading practices and wanted to go to Central Asia to study the famed Silk Road, used from about A.D. 500 to A.D. 1500 by camel caravans transporting goods between the Middle East and China.

It was never a road, exactly, but a general route that wound through the waves of sand dunes and stopped at various oases in the desert.

Soviet officials restricted foreign access to the area, but Hiebert, in his quest to study the Silk Road, managed to get a privately funded fellowship that allowed him one visit, which he made in 1988.

"I stayed for 15 months," he said, trying to make the most of his one chance to see the archaeological riches of the area.



A stamp seal cast, which dates to the Bronze Age, was found at one of the desert ruins.

storms posed a constant threat. One stranded him and his guides for seven days.

When he realized the extent of the Bronze Age civilization in the oases, however, he turned his attention to studying them. With the collapse of the Soviet Union, he has been able to return each spring when the weather was tolerable.

The oases, built in moist areas, created natural stepping stones on a trading route that reached from China, through the Indus Valley to Mesopotamia — all Bronze Age civilizations of the third millennium B.C.

The oases "looked like they were in the middle of nowhere," Hiebert said, "but they are part of the route everyone went on from west to east for thousands of years."

Moreover, the fortress-like buildings outside the biggest structures of ancient Mesopotamia or China, said Harvard's Lambert-Karlovsky. "The size at the base of some of the buildings is equivalent to the base of the pyramids," he said.

The Soviets determined them to be temples because of their size and distinctive layout, but Hiebert, who spent time looking for bone shards, seeds and other remnants of living patterns, came to a different conclusion.

He believes the buildings were more like housing complexes, with areas for ordinary people to live, others for the elite, storage areas, and what appear to be areas for ritual.

The dwellers were industrious in other ways as well. In Bactria and Margiana, there was no natural stone or metal. "It was nothing but sand," Hiebert said, and yet the ruins contained elaborate works in alabaster, marble and bronze. "The oases people would import materials and manufacture them in their own art style."



A bone ritual tube is carved into a little stylized human figure.

Lambert-Karlovsky said that many of the artworks, utensils and jewelry were buried with the dead. In an unusual pattern for other early people, the women were buried with more valuables than the men.

Most of the artifacts Hiebert found remain in Turkmenistan — the politically correct way to do archaeology today. But in his office on the fifth floor of Penn's University Museum, he displays a few.

There is a foot-tall alabaster column, a carved marble plate on a stand, an alabaster bowl, pieces of delicately painted pottery, and a bone pipe, possibly for drug use, carved into a little stylized human figure. Near the pipe, Hiebert found remains of the herb ephedra as well as poppy, which might have been made into opium.

Small bronze axes carry designs, including one of a wild boar, and a piece of pottery is decorated with leopards. "Their world was full of dangers — wild boars, snakes, scorpions," Hiebert said. "These animals show up in their ritual art."

The animal patterns support an idea, suggested by the Soviet archaeologists, that the people practiced an early form of the religion known as Zoroastrianism, invented in ancient Persia. Animal worship was part of Zoroastrian ritual, as was the use of fire, suggested by some hearths, or altars found in the remains of ancient buildings.

Hiebert is convinced that this oasis civilization originated around Anau. Not everyone agrees with him. At the forthcoming meeting in Boston, he expects a French team to present findings pointing to a migration from the north, rather than from Anau.

More laboratory work might reveal what the climate was like during the Bronze Age — probably much wetter and more conducive to farming than it is now.

Hiebert plans to go back in June, armed with satellite maps he obtained with the help of NASA. These reveal wet oasis areas — where other lost cities are likely to be found.

Faye Flam's e-mail address is flam@phillynews.com.



Missing civilization?

An aerial view of the fortress-like ruins at Margiana, an excavation deep in the Kara Kum desert.

An ancient people thrived in desert areas of what used to be the Soviet Union. A Penn archaeologist is among those wondering how such an advanced culture could have been overlooked.

MISSING CIVILIZATION!

An aerial view of the fortress-like ruins at Margiana, an excavation deep in the Kara Kum desert.

An ancient people thrived in desert areas of what used to be the Soviet Union. A Penn archaeologist is among those wondering how such an advanced culture could have been overlooked.



Archaeologist Fred Hiebert at Penn, with a few of the artifacts from the sites of three lost cities in what is now Turkmenistan and Iran.

the third millennium A.D., we'd be discovering a new ancient civilization," said Fred Hiebert, an archaeologist at the University of Pennsylvania's School of Anthropology and Archaeology, who has excavated in the region nearly every year since 1988, shortly before the Soviet Union fell.

Researchers consider writing a criterion for any true civilization, and now Hiebert thinks he may have evidence for that, too — a tiny stamp seal carrying four letter-like symbols in an unidentified language. It has dated it to 2500 B.C.

On May 12, Hiebert will present his findings at an international meeting on language and archaeology at Harvard and archaeology at Penn, meeting Friday at Penn.

"The implication of the seal is incredible," he said, because there's no existing evidence or so. "Who would have thought that now, at the beginning of the 21st century, we'd be discovering a new ancient civilization?"

"All the News
That's Fit to Print"

The New York Times

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SUNDAY, MAY 13, 2001

\$3.75

New England Final
Boston: Sunny and windy, noticeably cooler, high 69. Tonight, mainly clear, breezy, low 46. Tomorrow, mostly sunny, breezes dying down, high 64. Weather map appears on Page 2.

In Ruin, Symbols on a Stone Hint at a Lost Asian Culture

By JOHN NOBLE WILFORD

In an unexpected benefit of the cold-war's end, Russian and American archaeologists say they have discovered an ancient civilization that thrived in Central Asia more than 4,000 years ago, before being lost in the sweep of history.

The people of that area, the archaeologists say, built walled settlements with "imposing mud-brick buildings and fortifications. They herded sheep and goats and grew wheat and barley in irrigated fields. They had bronze axes, flint celts, alabaster and bone carvings and jewelry of gold and semiprecious stones. They left luxury goods in the graves of elite classes.

The accomplishments of these unknown people in what are now the republics of Turkmenistan and Uzbekistan began to emerge over several decades of excavations by archaeologists of the Soviet Union, who worked diligently but in academic silence behind closed borders. The surprising scope of society suggested

a stage of social and economic development generally regarded as civilization. All that seemed lacking was evidence of a number of writing systems.

With the end of the cold war, American archaeologists have joined the Russians in exploring the region, and now they are reporting that they have found inscriptions showing that these people may have indeed had writing, or at least were experimenting with a form of proto-writing around 2300 B.C.

"We are rewriting all the history books about the ancient world because of the new political order in our own time," Dr. Fredrik H. Hiebert, a University of Pennsylvania archaeologist involved in the excavation, said in an interview last week.

In the most recent and provocative discovery, Dr. Hiebert uncovered a small stone object, engraved with four or five red-colored symbols in

Continued on Page 8

In Ruin, Symbols on Stone Hint at a Lost Culture

Continued From Page 1

letters that apparently bear no resemblance to any other writing system of the time. Other scholars agreed that the symbols seemed to be unlike contemporary scripts in Mesopotamia, Iran or the Indus River valley.

Dr. Hiebert made the discovery last summer in ruins at Anau, a site near the border with Iran and only eight miles from the Turkmenistan capital, Ashgabat. He described the findings a week ago at a symposium at Penn and yesterday at a conference on language and archaeology at Harvard.

"You can say we have discovered a new ancient civilization," Dr. Hiebert said. At the same time, the pyramids of Egypt had been standing for three centuries, power in the Tigris and Euphrates valley was shifting from Sumer to Babylon and the Chinese had yet to develop writing.

Dr. Victor H. Mair, a specialist in ancient Asian languages and cultures at Penn, who was not on the research team, said of the inscription, "I definitely think that's writing."

Dr. Mair added that the discovery of ruins of an advanced culture in a region "where there was thought to be just space and emptiness fills an enormous gap" in terms of trade and cultural exchange across Asia in antiquity. It suggested that people in Asia more than 4,000 years ago were not as isolated as once supposed, he said, but probably had continentwide connections.

The dozens of settlement ruins of the newfound civilization stretch east from Anau across the Karakum desert into Uzbekistan and perhaps the northern part of Afghanistan. It is an area 200 to 400 miles long and 50 miles wide. Since no one knows who the people were or what they called themselves, archaeologists have given the culture the prosaic name of the Bactria Margiana Archaeology Complex, or BMAC (pronounced BEE-mack), after the ancient Greek names of two regions it encompasses.

Long after the ruins were buried in sand, the area was traversed by the legendary Silk Road, the caravan route linking China and the Mediterranean lands from the second century B.C. to the 18th century A.D. The oases that served as way stations for rest and resupply on the Silk Road also supported the BMAC civilization, which presumably was trading far and wide over some kind of ancient Bronze Age Silk Road.

Dr. Carl Lamberg-Karlovsky, a Harvard archaeologist, questioned whether the symbols on the artifact represented true writing. But he said that Dr. Hiebert's discovery "falls into place with other research showing that this culture was working out some sort of communication system, though it never reached the level of complexity in writing as its neighbors did."

Until the waning days of the Soviet Union, foreign scholars knew almost nothing of the nature and extent of the BMAC culture. Reports of findings were confined to Soviet journals.

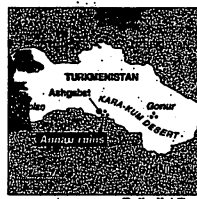
In the post-cold-war openness, Russian archaeologists are eagerly sharing their knowledge and inviting collaboration with Westerners. Dr. Hiebert plans to return to Anau, possibly next month, for further ex-



This Bronze Age oasis flourished 4,000 years ago. Now, Russian experts are inviting Western collaboration.



A stone seal, about an inch wide, seems to be a commercial stamp.



At Anau, on the old Silk Road, findings point to a buried culture.

cavations to be financed in part by the National Geographic Society.

Dr. Victor Surinidze of the Institute of Archaeology in Moscow found a distinctive architectural pattern in many of the ruins. The buildings at each site appeared to be erected in one burst of construction according to the design of a single architect. The largest buildings were like huge apartment complexes, each bigger than a football field and divided into dozens and dozens of rooms. They were surrounded by multiple mud-brick walls, some as much as 10 feet thick. Beyond lay traces of agricultural fields.

In the 1990's, Dr. Hiebert began digging slowly to deeper, and therefore earlier, levels of occupation. He was rewarded last June while excavating beneath a room in what appeared to be an administrative building at Anau. That was where he found the carved symbols on a piece of shiny black jet stone, a type of coal, less than one inch to a side.

Archaeologists believe that it was a stamp seal, commonly used in ancient commerce to mark containers by their contents and ownership. The site also contained many lumps of clay that were used to seal vessels or parcels.

Scientists analyzing charcoal found with the artifacts dated the material at 2300 B.C., before the large settlements were built. American radiocarbon dates have established that the BMAC culture was present in Central Asia from 2200 B.C. to 1800 or 1700 B.C. Russian research generally underestimated the culture's antiquity by about 500 years.

Back at Penn, Dr. Hiebert showed the symbols to colleagues, and they were stumped. They said the symbols were unlike the Mesopotamian cuneiform script, generally regarded as the earliest writing system, or the proto-Elamite writing on the Iranian plateau.

Dr. Gregory L. Possehl, a specialist in Indus archaeology at Penn, said the artifact's shape was wrong for an Indus stamp seal and only one sign could possibly be construed as related to Indus script.

"It looks as if it is some kind of writing," Dr. Possehl said last week. "It is unique, as far as I can tell."

Dr. Mair assured Dr. Hiebert that the symbols were not Chinese, if the artifact is as early as has been dated. Chinese writing is thought not to have begun until hundreds of years later.

Whatever its origins, Dr. Mair said, the type of symbols and the small number of strokes used to create each one "makes me think the writing system is already fairly abstract, not pictographic."

Dr. Hiebert is not so sure. He cautioned that there was insufficient evi-

dence to determine if this was an evolved writing system, or if these people had become aware of the existence of writing elsewhere and were experimenting on a system of their own. He speculated that the engraved stamp included a prefix symbol, a marker to designate the category of the word to follow, that preceded four symbols for the word or words. These could stand for the name of a commodity and its owner.

The only other example of possible writing by the BMAC people was reported two years ago by Dr. L.S. Klovkov of the Institute of Archaeology in St. Petersburg. He found a pot shard in the ruins at Gomer with what appeared to be four letters of writing in an unknown script and language. Other Russian research has turned up evidence that people of the BMAC culture made notations in pottery and clay.

Scholars have many questions about the new ancient civilization, mainly about where the people came from, what influence they had on their times and what happened to them.

Dr. Hiebert thinks that the culture emerged near Anau, in the foothills along the Iran-Turkmenistan frontier, where there is evidence of earlier villages. Dr. Sarianidi contends that the culture's roots lie in Turkey. Other scholars point to evidence showing that they might have migrated from the north.

The BMAC culture's decline is equally mysterious. "Why that happens remains unclear," said Dr. Lamberg-Karlovsky of Harvard. "The architectural signatures, their fortified buildings, disappear after a few hundred years. Most of the luxury materials disappear. There is a diminution of complexity. Perhaps people revert to smaller settlements, or they leave and are absorbed in other cultures."

But for a while, in a land and a time unsuspected by archaeologists until recently, a civilization flourished and then vanished, leaving crumbling walls of mud brick and some cryptic symbols on a tiny piece of stone.

First word from Asia's lost civilisation

By Richard Beeston
and Emily Davies

A LOST civilisation may have developed a previously unknown written language more than 4,000 years ago, a leading archaeologist said yesterday.

A small engraved stone could hold the key to uncovering a literate society that flourished and disappeared in what are today the deserts of Central Asia.

The discovery, which could lead to a reappraisal of the ancient world, was made last year at a ruined site near Ashgabat, the capital of Turkmenistan, where scholars have been excavating for years. They have been trying to determine who inhabited the thriving oasis settlements stretching from present-day Turkmenistan east through the Karakum desert into Uzbekistan.

The ancient community is known to historians as the Bactria Margiana Archaeology Complex after the Greek names for two lands in the area. The inhabitants had buildings made of mud bricks and protected by fortifications. They kept livestock, irrigated their crops and manufactured ceramics, bronze tools and gold jewellery. Fredrik Hiebert, an archaeologist at the University of Pennsylvania in Philadelphia, summed up the customary assessment of them: "They were urbanised, sophisticated; they had every aspect of civilisation except writing."

That assessment changed when Dr Hiebert and a fellow archaeologist from Turkmenistan were digging beneath the main site at Annau, near the country's border with Iran, once a sensitive Soviet border



Engravings on a 4,000-year-old stone seal have not been matched to any language

area. They found a large room and among the remains a small, black stone object engraved with four or five coloured symbols, which appeared to be some sort of seal.

Stamp seals were commonly used in the ancient world to mark the contents and ownership of goods being transport-

ed or stored. Initially, it was thought that the symbols had been imported from another civilisation from the period, possibly that of Iran, Mesopotamia or the Indus.

But the engravings, thought to be made from local material carbon-dated to 2300 BC, have not matched any known lan-

guage. The only script to which they bear resemblance is Chinese, although the written form of that language evolved centuries later.

"We concluded that this was a unique script engraved on a local material," Dr Hiebert said. "It is a very exciting discovery for ancient historians.



It could be the first evidence of a literate society in Central Asia. It could change the way we view the ancient world."

Dr Hiebert has been given a grant from the National Geographic Society for further excavations of the site. He believes that the excavation area of up to 12 acres could be part of a much larger complex.

He predicted that archaeologists would make further significant discoveries not only in Annau but across the region, which for much of the past century was closed to foreign scholars by Soviet authorities.

Chris Gosden, an archaeology lecturer at Oxford and a curator of the Pitt Rivers Museum, who has a special interest in Turkmenistan, said that he believed the script was almost certainly writing.

"It is definitely a form of complex symbolism which is indicative of a sophisticated accounting system of some kind, although it is impossible to know exactly what it was used for," he said.

"A script like this is the first real evidence of this civilisation and provides a significant piece of a much larger puzzle. This discovery confirms the status of this civilisation between Mesopotamia on the one hand and the Indus civilisation on the other."

中亚发现高度发达古代文明

本报讯 中亚文明近日再次引起学界瞩目,据悉,4000年前的中亚腹地已经产生了高度发达的文明。

据了解,这一位于现今土库曼斯坦和乌兹别克斯坦境内的不为人知的古老文明在前苏联时期就已经被考古学家发掘了多年。但惊人成果的获得还是在去年夏天,美国宾西法尼亚大学考古学者赫伯特(Fredrik T. Hiebert)从发掘出的一块石头上找到了4,5处红色刻划符号,相信这很可能是文字的证明。

日前赫伯特在接受采访时表示:“相关情形表明这与文明的标准相当吻合”。他谈到大型建筑及纪念性墓碑等均具有城市文明的水准,惟一缺乏的就是确切的文字证据。

由于迄今为止尚没有人清楚这处文明原住民的情况,考古工作者从古希腊时期对该地点的称谓,暂称这处文化为 Bactria Margiana 考古综合体。

赫伯特自去年六月开始对位于土库曼斯坦的安瑙(Annau)遗址进行发掘,不久前在宾大和哈佛举行的学术研讨会上,赫伯特详细描述了他的惊人发现。他说,他找到的这件人工制品可能是一种以无烟煤精为材料制作的印章,“它上面刻划的图案是我们在中亚地区发

现的最早的文字资料”。他指出其他考古专家认为这枚印章上的标志与古代美索不达米亚、伊朗和印度河谷的印章文字截然不同。在古代这些印章很可能是商务交往中商品所有者的标志。学者指出,从东面的安瑙向西的卡拉库姆沙漠直至乌兹别克斯坦及阿富汗北部这一大片长300-400英里、宽50英里的范围内,遍布着大批古文明遗迹。

这些人工制品来自公元前2300年,那时埃及金字塔已在历史的风雨中矗立了3个多世纪,底格里斯河和幼发拉底河文明正从苏美尔王朝过渡到巴比伦帝国的麾下,而中华大地也正在发展着自己特有的文字系统。

赫伯特介绍说,宾大亚洲语言与文化学者梅尔(Victor H. Meir)告诉他这些刻划符号在许多地方同其后百余年间成熟起来的中文很相像。但关于这些仅仅只是类似文字的刻划符号,到底是不是真正的文字,目前在学者们中间争论还十分激烈。“我也不十分确定”赫伯特说,“只有这些还远远不足以说明问题,更深入地发掘还将进行下去,肯定会有更惊人的发现。” (田远新)

现代东亚人来自非洲有新证据

本报讯 2001年5月11日,一个国际性的研究小组在美国《科学》杂志上公布了他们的研究成果:据来自东亚163个群体、12127个男性个体的Y染色体DNA检测结果,东亚智人的祖先来自非洲,而且迁移之后直立人和智人之间几乎没有发生杂交。换言之,起源于非洲的现代人在东亚彻底取代了更早的来自非洲的群体。

此次研究最具说服力的是它的材料:采样的163个群体来自中亚、中西伯利亚、鄂毕次克海/阿穆尔河、堪察加半岛、东北亚、中国北方汉族、中国南方汉族、台湾土著、东南亚、印尼/马来西亚、密克罗尼西亚群岛和东北印度等等,涵盖了非常广的地域范围。

该研究项目旨在检验“人类共同的起源地在非洲”这个假设,同时也想找到直立人和智人在古代发生融合的证据是否存在。他们认为用Y染色体进行检验是因为Y染色体由父亲遗传给儿子的时候,可以保留其同一性。大量进化方面的信息比线粒体

DNA所提供的更具有可用价值。

研究者首先从中国、印尼、英国和美国采集样本,他们发现Y染色体在三个位置发生突变,并且12127个样本中每一个Y染色体都携带这三种多态性之一(如果任何一位男性个体并没有携带,即意味着“彻底取代”这个假设不成立)。

虽然遗传漂变也会偶然导致这个研究结果。但因样本的群体数目提供了强有力的统计学证据,因此可认为消除了这种偶然性——所有163个群体不可能在相同的方向上发生漂变。

因此,研究者确信,他们的研究方法是可靠的。

但有一个问题尚未解决:那就是Y染色体的适用性。如果杂交确实未发生过,那么所有从直立人继承下来的Y染色体都将被种群淘汰,样本中就发现不了这类被淘汰了的Y染色体。如果仅仅发生了直立人女性与智人男性的结合,而没有发生智人女性与直立人男性的结合,同样不会有Y染色体的混合证据。(小孙)



《中国文物报》

2001年5月23日

第0912期

2000/5/23

Zhongguo Wenwu Bao
(China Cultural Relics News)

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The following three ~~pages~~^{letters} are some of my earliest correspondence relating to the Anan seal inscription. Fred found the seal in late May or early June, 2000. He told me about it in late October of the same year. I never did get to see the seal itself because he had returned it to Turkmenistan by the first half of ~~November~~ October, 2000. It is now kept in a vault there.

My e-mail of November 9, 2000 to Fred lists all the scripts from which, as of that date, I thought the script of the Anan seal inscription did not derive. More or less, I still stick to that list. I excluded Chinese because of the early date (2300 BCE) of the Anan seal. At that time, China had only isolated pot marks, not a fully developed script with connected writing. Nor did it have stamp seals at that time.

As to which script(s) the Anan seal graphs ^{have} derived from, I am unwilling to say until the publication of my multi-volume monograph on the origins of the Chinese script that I began to write in 1987.

My letter of 5/XI/00 yielded no useful responses

Fred approached me in early November (or late October) 2000 with the idea of holding a mini-symposium in Spring, 2001 about the Anan seal. It never happened. He ended up presenting the seal at my conference on "Contact and Exchange in the Ancient World," held at

② Ann May 5-6, 2001, John Noble Wilford, the senior science editor of the New York Times was present at the conference. His front page article about Anan (especially the seal) brought it to the attention of the entire world.

UNIVERSITY of PENNSYLVANIA

School of Arts and Sciences

Department of Asian and Middle Eastern Studies
 847 Williams Hall
 Philadelphia, PA 19104-6305
 215-898-7466
 FAX: 215-573-9617

V/XI/00

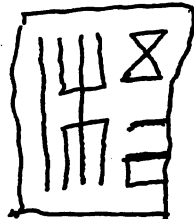
Dear Fred,

Your jet signet from Aram is very
 exciting and potentially of enormous conse-
 quences.

You drew the inscription this way
 for me:



But my recollection is that the bottom
 right corner is actually broken off like
 this:



This is crucial. Please check again
 carefully to see whether I am right.
 Best, V.

School of Arts and Sciences

Department of Asian and Middle Eastern Studies

847 Williams Hall

Philadelphia, PA 19104-6305

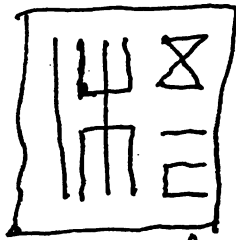
215-898-7466

FAX: 215-573-9617

5/XI/00

Dear Colleague,

Recently, an archeologist showed me a
~~seal~~
 signet with the following inscription:

his way of
drawing it

broken off

my way of
drawing it

I am not at liberty to tell you
 exactly where the seal/signet was
 found nor its date. All that I can
 say is that it is from somewhere in
 Central Asia and dates to before
 1000 B.C.E.

I think that I have already



achieved a partial decipherment and have an
idea of related writing systems. Some things
puzzle me, however, such as the vertical line
at the left.

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What do you think of this piece?
Any meaningful contributions toward a full
decipherment and identification of linkages
to other known scripts will be acknowledged
in my published findings.

810-543-8288 (H)
215-898-8432 (O)
215-898-7466 (DEPT.)
215-573-9617 (FAX)
e-mail: vmair@sas.upenn.edu

Sincerely yours,
Victor H. Mair
Victor H. Mair
Professor

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Subject:the inscription**Date:** Thu, 9 Nov 2000 19:24:08 -0500 (EST)**From:** vmair@sas.upenn.edu (Victor Mair)**To:** hiebert@sas.upenn.edu (Fredrik T. Hiebert)**CC:** vmair@sas.upenn.edu (Victor Mair)

Hi Fred,

Either because of the date or the form of the letters, mostly the latter,
I have determined that your Anau inscription is not:

proto-Elamite
 Egyptian
 cuneiform
 Harappan (proto-Indian)
 Sinaitic
 Linear A or B
 South Semitic
 North or Northwest Semitic
 Iberian, Punic
 Chinese
 Phoenician
 Ugaritic
 Cretan
 Old European
 Runic
 Aramaic
 Hittite
 African

As to what script(s) the Anau inscription IS related, by a process of elimination, I have narrowed it down to a particular group that often escapes the attention of researchers. Furthermore, this is a group of scripts that, after working on the evolution of writing for about 20 years, I would have expected to be pertinent for any evidence of writing at Anau. Before proceeding further, however, I need to know how (and when) you plan to make any detailed information I might supply you available to the scholarly world.

In any event, to do a thorough job on this inscription, I'd need to spend at least another month (while I'm doing lots of other things, of course).

Victor

--

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e-mail: vmair@sas.upenn.edu (read once or twice a week)

Cleuziou, Serge, Gherardo Gnoli, Christian Robin, and Maurizio Tosi. "Cachets inscrits de la fin du III^e millénaire av. notre ère à Ras' al-Junayz, Sultanat d'Oman." *Académie des Inscriptions & Belles-Lettres, Comptes Rendus* (April-June, 1994) 453-468. On pp. 453 ff. may be found a useful survey of the diffusion of writing in the region stretching from Egypt to the Indus Valley circa 2200 BCE.

Hiebert, Fredrik T. "Bronze Age Central Eurasian Cultures in Their Steppe and Desert Environments." Chapter 5, pp. 51-62 of a work dating to 1999 or later whose title and other bibliographical information are unknown to me. Has an excellent series of ^{ecological} maps of Central Eurasia from the Middle Bronze Age to the Late Bronze Age. Also includes a very useful bibliography.

"Progress Report: Arvan depo, Turkmenistan, May-June 2000." University of Pennsylvania - IUTAK, Turkmenistan

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