INTRODUCTION

Rediscovery

The mummies stalked into the world's press rooms in 1994. London's Mail on Sunday could trumpet how the discovery of mummies in western China had stood 'history on its head'. Preserved in a state that surpassed anything to come out of ancient Egypt and decked in clothes that were gaudy even by 'New Age' standards, the mummies of Xinjiang, the westernmost and largest of the provinces of modern China, had clearly caught the public imagination. But it was also obvious from the popular accounts that journalists were going to have a hard go of it. After all, these mummies were housed in a museum in Urumqi. Where? They were more ancient than the current population of the region, the Uighur. Who? And what angle should one play? Although the mummies were certainly spectacular enough to fill a page or two of a colour supplement, they came from an area so far removed from the average reader's ken that it was difficult to find common ground, much less talk of revolutionary discoveries. In short, the mummies looked very exciting; it just wasn't all that clear why they should be so exciting.

What lingered from the journalists' accounts was that the remains of tall, blond Europeans, possibly from northern Europe, had been found in the desert wastes of western China. Their earliest remains dated to about 2000 BC and they were found to have survived in this region down to about 1,700 years ago. And somehow the Chinese historian had got it all wrong: China had not developed its civilization in splendid isolation from the West but had been heavily influenced by prehistoric Europeans, so much so that it may have been Europeans who introduced both the wheel and bronze metallurgy, two of the primary technologies of civilization, to the Chinese. All of this was politically very sensitive and there were hints that the Chinese authorities were trying to keep these important discoveries under wraps. As to what ethnic or linguistic label might be assigned to the mummies, it was suggested that they might have been the ancestors of the Tocharians. Tocharians? The journalists tried their best: the Tocharians seemed to have
been closely related to the Celts of western Europe. What did this mean? That prehistoric Irishmen had become lost in western China? But they also appeared to be tall blonds and looked more like Germans or Scandinavians.

In short, remains of people closely related to those who read Western newspapers and magazines somehow tricked their way across Eurasia to settle in the arid wastes between Qishahar and Lopnor. Where? Before we move ahead we had better travel back a decade and recapture the excitement of the recent rediscovery of the mummies by Victor Maier.

New Friends in Ürümqi

Victor has made regular trips to China since 1981. Usually they have involved visits to archaeological sites in Xinjiang and Gansu, the far western portions of the country, since his research specialty for the past two decades and more has focused on early manuscripts found in that region. He had been to the Ürümqi Museum many times in the past, but the summer of 1988 was different. As he walked through the old, familiar exhibition halls, he was totally unprepared for what he would encounter in a new gallery that had been opened at the end of the archaeological section. Pulling the hanging curtains of the doorway, he entered another world.

The room was full of mummies! Lifelike mummies! These were not the wizened and eviscerated pharoahs wrapped in yards of dusty gauze that one normally pictures when mummies are mentioned. Instead, they were everyday people dressed in their everyday clothes. Each one of the half-dozen bodies in the room, whether man, woman or child, looked as though it had merely gone to sleep for a while and might sit up at any moment and begin to talk to whomever happened to be standing next to its glass case.

Although he was supposed to be guiding an instructional tour for the Smithsonian Institution, for the next three hours Victor totally forgot about all else in the world except the mummies in that dark, sequestered room of the Ürümqi Museum. For the remainder of that day, he became a member of the community of ancient souls in the room that, years later, he would return to visit again and again.

Although he swiftly became familiar with all of them, the mummy Victor remembers best from that initial encounter was the one (commonly known as 'Charshan Man') whom he came to call fondly 'Ur-David'. 'Ur' means 'primal' or 'earliest' and 'David' refers to his second-oldest brother; the resemblance between the two gentlemen is startling. 'Ur-David' was sleeping peacefully in the far-right corner of the room (pls. I, II). He was lying on his back, his head propped up on a white pillow, his knees raised slightly, and his expressive hands - held together - by a friendship bracelet twisted from red and blue yarn - placed gently upon his abdomen. 'Ur-David' was wearing a bright reddish-purple woolen shirt trimmed with fine red piping and trousers of the same material. His knee-high socks of matted wool fibres (not quite felt) were as brightly coloured as a rainbow - with horizontal stripes of flame red and golden yellow, but occasionally alternating with the most deliciously taint blue imaginable. Over the socks were boots of white leather, probably from a deer, that reached to his thighs. There was also a mystifying leather thong wrapped around the middle finger of his left hand; it was secured by passing one end through a slot in the other end. Perhaps it was a crop, signifying that he was a horseman, or merely a means of keeping the deceased from falling on his side.

Xinjiang

The common political designation of the far western territory of China is Xinjiang or, as it is to be found in books earlier than the Chinese spelling reform of 1956 which introduced the pinyin system of transcription, Sinkiang. The name means 'New Territories', as they only became a province of the Chinese state in 1984. The main ethnic minority of the region are the Uighurs, a Turkish people who began settling there in the 8th century AD and the territory is more properly known as the Uyghur Autonomous Region of Xinjiang (altogether there are 47 different ethnic groups in the province). The names 'Eastern Turkestan' or 'Chinese Turkestan' have also been applied to this region, as has the politically more neutral 'East Central Asia' which we will often employ in this work. Xinjiang comprises a territory of over 600,000 sq. miles, one sixth of the entire country of China. Its areas is on the order of the British Isles, Belgium, the Netherlands, France, Germany and Italy put together with room to spare or, from an American point of view, well over twice the size of Texas but a bit smaller than Alaska.
But it was the face that arrested Victor most. He circled the glass case at least a dozen times, taking in each tiny detail of this human being with whom he felt such an affinity. He wanted to absorb everything about this person from the past, yet it was the face that kept drawing his attention. What was the meaning of the spirals painted in ochre on his temples? Were they solar symbols? The horns of a sheep? Finally, he could do nothing but stare fixedly into those ancient eyes. They were blissfully closed, yet they spoke eloquently and powerfully. Then, as his vision shifted to the top of the head, he became conscious that the hair of ‘Ur-David’ was blond. His mind began to race wildly, filled with a thousand insistent and unanswered questions: What is this tall, blond man doing here in the middle of Central Asia where almost every person one sees today is much shorter and has black hair? How did he get here? Where did he come from? When did he arrive? What language did he speak?

Victor looked at the label on the case. It said that the individual lying inside was from Chuchan (Qemo in Modern Standard Mandarin (MSM)) and that his remains dated to 1000 BC. He paced around the room, avidly reading every single label – 1230 BC, 1800 BC, more individuals from 1000 BC. The shock of seeing these living fossils of Xinjiang first led him to question their authenticity. To be sure, at the turn of the century European explorers such as Sven Hedin of Sweden, Albert von Le Coq of Germany and Sir Aurel Stein on behalf of Britain had all recounted their discoveries of desiccated bodies in their search for the artistic and literary relics of the Buddhist shrines of Central Asia. In their magnificently illustrated accounts, they had even published drawings and photographs of these remains. In a different world and time, these excited little people and never prepared Victor for coming eye to eye with the prehistoric people of Xinjiang. When many questions still racing through his mind, he dashed off to recover his Smithsonian charges.

Then the Iceman Came

On the morning of 26 September 1991, Victor was sitting in the newspaper nook of the National Humanities Center in Research Triangle Park, North Carolina. When he picked up the New York Times, he was stunned to see the headline announcing the discovery of the frozen body of a Copper Age hunter-nomad high in the Oetztaler Alps on the border between Austria and Italy. Except where it had been damaged by a pneumonia chisel in the area of the left buttock and thigh during recovery, the body of this ‘Iceman’ was almost perfectly preserved.

As Victor read more reports about this remarkable event, he learned that Ötzi (as the Iceman had come to be called) was 5,300 years old, that he was equipped with a bow, arrows, axe, and other implements, that he wore carefully sewn fur and leather garments, and that he bore presumably therapeutic tattoos at strategic spots on his body. For Victor, however, what was most striking was that Ötzi’s icy grave was amazingly near to the Austrian village, Pfaffenhofen, in which his father was born and grew up.

While he was devouring the news about Ötzi, almost instantaneously there formed in his mind an ineluctable connection between the Copper Age Iceman of the Austro-Italian Alps and the Bronze Age denizens of the Taklimakan Desert whom he had first seen in 1988. Somehow or other, he sensed a distinct relationship between these ancient human beings. He became possessed by the desire to determine whether this was indeed true and, if so, in what way the Iceman and the desert people were linked.

Within half an hour of learning of the discovery of Ötzi, he resolved to organize a research project on the mummies of the Tarim Basin (throughout this book we will frequently use ‘Tarim’ as shorthand for both the Tarim Basin proper and the neighboring regions to its north and east). He was aware that DNA tests would be carried out on Ötzi. Consequently, he thought that it would be both simple and precise to do the same for the Taklimakanians. Once the DNA of the Iceman and the desert people were compared, it should be easy to decide if they were of the same stock. That very afternoon, he began to write letters in preparation for a scientific expedition to the Uyghur region of China.

The Quest Begins

There were three main aspects to the flurry of activity into which Victor immersed himself during the coming months: locating reliable scientific
expertise, raising the necessary funds, and obtaining the permission of the Chinese government to engage in cooperative research. He viewed all three tasks as equally challenging. Much to his surprise, he met with swift success in all three areas of endeavour.

The first step was to solicit the guidance and help of a qualified geneticist. He had long known of the outstanding work on population genetics of the distinguished Stanford scholar, professor Luigi Luca Cavalli-Sforza. He was unprepared for the approachability of this world-class scientist and man-of-ideas. Not only did Cavalli-Sforza enthusiastically declare that he would be happy to participate personally in the research project, he also suggested several possible funding agencies. With one telephone call to Cavalli-Sforza, he had already come close to killing two of the three birds required to set the enterprise in motion.

The Alfred P. Sloan Foundation made a substantial grant to undertake research on the mitochondrial DNA of the Tarim Basin mummies during the 1993 season and they generously doubled the size of their grant in the following two years. Funds were also obtained from Victor’s own University of Pennsylvania, the Henry Luce Foundation, and numerous individual citizens who are interested in world history and wish to do their part to clarify the mysteries surrounding the mummies of the Tarim Basin.

The signals he was receiving from various sources in China were sufficiently encouraging to assume that there was at least a chance that he would be able to proceed. In particular, Wang Binghua, Director of the Institute of Archaeology in Ürümqi, exerted himself on behalf of the project. And although there were bureaucratic hiccups enough along the way, permission to go ahead was obtained from the Chinese authorities at the eleventh hour. By this time Cavalli-Sforza had had to abandon the idea of travelling to Central Asia himself because of a heart condition, so he provided a superb substitute in the person of Paolo Francalacci of the University of Sassari in Sardinia. After meeting up in Beijing, Paolo and Victor flew to Ürümqi on 22 June. Lengthy negotiations were required to allay the main concerns of the Chinese. It was agreed that their geneticists and archaeologists would be directly involved in all phases of the work, that they would be listed as joint authors of any significant publications emanating from the project, and that technology transfer would occur in the form of training in the new, advanced analytical techniques the American side would be using. It cannot be stressed too heavily that taking tissue samples was a highly sensitive matter. The Chinese side was also eager for some of their scholars to go abroad for brief visits or for extended periods of study, to raise money from American foundations to support their work, and to seek assistance in building a special museum for the preservation of the scores of corpses that had been excavated and will continue to be excavated in the Uyghur region. Victor readily acceded to the mission of helping the Chinese build what might affectionately be called the ‘Mummy Museum’.

Bronze Age People in Poplar Gully

On 25 June, Wang Binghua, Paolo and Victor travelled by car 490 km (304 miles) eastwards across the scorching desert to Qamul. Known as Hami in Mongolian, the name of this important Silk Road town is transcribed in Modern Standard Mandarin as Hami. It is famous for its succulent melons suffused with fragrance and sweetness. Large amounts of cotton are also grown in irrigated fields surrounding the town. Nearby was one of the most important sites for the project.

Approximately 1 km (0.6 miles) to the northwest of the oasis village of Qara Qo’q (MSS Wung) is a terrace of pebble-strewn desert that lies across a little valley called ‘Poplar Gully’ which separates it from the town. From the terrace one can see at the town’s edge a distinctive mound of reddish earth which gives its name to the area. In Uyghur, it is known as Qizilchoqa, which means ‘Red Hillock’. A tract of about 5,000 sq. m (53,820 sq. ft) has been fenced in for protection and is under the jurisdiction of the Xinjiang Institute of Archaeology which is responsible for its ongoing excavation.

The Qizilchoqa cemetery was discovered by Wang Binghua in 1978 by following the stream in Poplar Gully from its glacial source high in the Tangri Tagh (‘Celestial Mountains’, Tian Shan in MSS) to the north. It was his hunch, based on the many years he had spent as a practising archaeologist in the region, that ancient peoples would have located their settlements along the stream because it provided a relatively reliable source of water. As he followed the stream bed, Wang queried the local inhabitants as to whether they had come across any old broken pots, wooden artifacts and so forth. An old man named limit came forward with some ancient
objects that were exactly what Wang was looking for. When Victor initially visited QiZilchoqa in 1993, Li Mun was the guard at the cemetery.

During the first year, 29 graves were excavated. In 1986, 82 more graves were dug and, in 1991, two additional graves were excavated in cooperation with a fairly large team of Japanese archaeologists. Judging from the size of the tract and the number of obvious depressions in the surface of the earth (which indicate the existence of a grave beneath), there were probably at least another hundred graves remaining to be dug at QiZilchoqa. But by June 1997, when Victor returned to QiZilchoqa to make a film about the mummies for Nova (WGBH-Boston) and Channel 4 (London), the entire cemetery had been hurriedly rumbaged. Few graves remained untouched and litter from obviously hasty 'excavations' was strewn across the pebbly desert surface. In June 1998, Victor returned to QiZilchoqa once again, this time to make a film for the Discovery Channel. The debris from the previous year's shallow scavenging had been cleared up and it appeared that it might still be possible someday to excavate the remaining graves properly.

The QiZilchoqa graves have been dated to approximately 1200 BC by Chinese archaeologists because of the presence of bronze objects, the style of painted pottery, and the radiocarbon dates. This puts the site at a key point in the development of Chinese civilization, the height of the Shang dynasty. It is dated to essentially the same moment as the introduction of the chariot and the rise of writing.

Aside from numerous well-preserved corpses, a wealth of artifacts was recovered from the graves. These were not luxury goods but simple items for use in daily life (combs, mirrors, needles, bowls, pots, hooks, bracelets, bells, spindles, bread, etc.). Among those that struck Victor most forcibly was a part of a wheel that he spotted protruding from an unexcavated grave. It was similar to another partial wheel that had been unearthed earlier from one of the other graves, which was kept in the Qumul Museum. These wheels, termed 'tripartite disc wheels', are of a peculiar construction which joins three thick planks (rounded at the edges) with tightly fitting dowels. The same type of disc wheel is found in West Asia and throughout Europe a thousand years earlier. The spiked chariot wheel has not yet been found at such an early date in Xinjiang, but it has been found at a slightly earlier site, Nombong, in Qinghai (Kokonor) province just to the east.

The QiZilchoqa graves are relatively simple in their construction. About 2 m (6 ft 7 in) deep, they are lined with large, unbaked bricks around the lower part of their sides. The pits were just big enough for the occupant(s) of the grave who were placed in them on mats, lying on their sides or backs with their knees bent upwards. Above the buried individuals, about halfway down in the pit, was a lodge around all four sides. A layer of mats and reeds was placed here to prevent the sandy soil from falling down into the brick-lined burial chamber. The opening of the grave was covered by a row of large, rough-hewn logs strown with mats and reeds over which was a layer of sand.
The most impressive aspect of the Qochoa graves is, of course, the ancient corpses themselves. Due to the unique combination of climatic conditions in the area, many of the bodies have been preserved intact through a process of natural desiccation. The corpses are fully clothed in marvelously coloured and patterned woolen fabrics, felt and leather boots, and sometimes leather coats. They are clearly of Caucasian/Europoid extraction (long noses, deep-set eyes, blondish, light-brown or red hair, and so forth). The men are fully bearded and the women have long, braided hair.

In company with about a dozen local archaeologists and diggers, Victor and his crew spent the entire day at Qochoa exhuming corpses from graves that had previously been excavated but, after preliminary examination and recovery of important artifacts, had been reinterred because of a lack of adequate storage facilities in Qumul or in Urumchi. As one grave after another was opened, Victor was awed by the sight of bodies that had been lying there for over three millennia.

Paolo, wearing a face mask and rubber gloves to avoid contamination of the corpses with his own modern (and much more potent) DNA, used surgical scalpels to remove small samples of tissue from unexposed areas of the bodies (usually the inner thighs or underarms). He also took fragments of a few bones (parts of ribs that were relatively easy to break off and teeth which preserve the DNA perhaps even better than do the muscle tissue and skin).

The samples were placed in collection jars, sealed and labelled. While Paolo was doing his work, Victor made a photographic and written record of the tissue collection. Altogether, they took double or triple samples from six corpses at Qumul.

That evening the team feasted on an elaborate banquet held for them in the guest house where they were staying. Paolo was wearing his 'Ancient DNA' t-shirt and beaming broadly.

The Trio From Chärchar

Although the 1993 expedition did not travel to the town of Chärchar (Qumul in Mandarin), which lies towards the eastern end of the southern branch of the Silk Road, they were able to see half a dozen mummies from the very important site of Tugia and that lay in the desert nearly. Three of these were the by-now-world-famous 'Sunday supplement' family comprising 'Ur-

The temples of
'Ur-David' were
ornamented with
designs in relief
K. 'Chunche Man',
Victor Met's 'Un-David',
indians in the
Ehrenshi Museum.

ill. The woman from
Diehunlaq who
accompanied
'Un-David'
Close-up of the face and tattoos on a terracotta figurine, grave 4. (Opposite) Close-up of tiger skin, grave 4.

VIII. Close-up of the face and tattoos on a terracotta figurine, grave 4. (Opposite) Close-up of tiger skin, grave 4.

VI. Bury and an anomalous European couple exhumed from Neya in 1995. They wore fine silk clothing and matching face covers. Their burial differs to the Han or Jin period (probably 2nd-3rd century AD).

X. X. (Below left) Fragment of wall from Qinkouzi (below) Qinkouzi terrace.
The tiny Korla Museum also houses the spectacularly well-preserved and magnificently clad body of a woman in her fifties. At first glance, Victor thought it was a man because the person seemed to have a moustache (pl. VII, ill. 6). It was only when he returned home and examined his photographs with a magnifying glass that he realized that what had seemed like a moustache were actually tufts of wool stuffed in the nostrils. This is particularly interesting in the light of the ancient Egyptian practice of packing the nostrils (and other orifices) of the deceased with linen and/or resin to prevent the escape of bodily fluids which would damage the appearance of the corpse. Another misapprehension about the corpse of the woman had to do with what Victor took to be her extraordinarily long fingernails. He initially assumed that they had continued to grow after death, a common folk belief. Upon further investigation, he learned that the nails of dead people only seem to look longer because more of them is exposed as the flesh on the fingers shrinks. In the case of the older Korla woman, her fingers themselves are preternaturally long and the nails that extend from them seem to be at least an inch in length; they could not possibly have grown so much after she died. Instead, like the Empress Dowager at the end of the Manchu dynasty, she must have worn them this way while she was alive—a symbol of her status as a person who did not have to work with her hands. This was one of the few examples of overt social differentiation that Victor encountered in his investigations of the Bronze Age inhabitants of the Tarim Basin and surrounding areas.

Grave-robbers at Subeshi

As the 1993 expedition was driving to and from Qumul, it stopped near the site of Subeshi ('Water Source') which lies in the gorge of Tuyuq, not far to the east of Turpan (Turfan). Here, during March–April 1992, a team led by Li Enquo of the Xinjiang Institute of Archaeology had excavated a series of graveyards from the Warring States period (mainly 5th–4th centuries BC but also some a couple of centuries later). The partial excavation, like so many others in China, was undertaken on a rescue basis because of the construction of a small country road in the vicinity and repeated grave robbery at the cemetery. Over a dozen corpses were recovered, as well as an enormous number of artifacts which reveal fascinating details about the customs and material culture of that period (a woman's hat with long horn-like projections, which prompted some Chinese archaeologists to speculate that the number of projections reflected the number of the woman's husbands; medicine pouches to be hung at the waist; operations with horse-hair sutures; a saddle; composite bows of complicated structure with cases and quivers, etc.). It is surprising that, at this rather late date and so far to the east, all of the individuals from Subeshi that Paolo and Victor examined were still clearly Caucasian; there was not a single Mongoloid among them. The corpses and most of the artifacts were kept
in a damp and cramped basement storage room at the Institute of Archaeology in Ürümqi. After their condition was revealed in the worldwide press, they were moved to a dusty upstairs room. Yet they are still completely exposed to the atmosphere (the windows of the room are kept open all year round); with the exception of several that have been moved to the museum, no measures have been taken to conserve the Subeshi mummies. The situation is particularly frustrating since Victor made a large donation to the Institute of Archaeology in 1994 that was specifically earmarked for the construction of glass cases for the Subeshi mummies. It was promised that the cases would be built in Shanghai and installed within a year, yet by 1999 nothing had been done. There is a desperate need to provide these precious specimens with surroundings that are better designed to ensure their preservation.

Victor visited the Subeshi graveyards again in May 1995 with Lu Enguo (the excavator of the site), Dolkun Kamberi (his Uighur research associate), Elizabeth Barber (a world-renowned authority on prehistoric textiles), Paul Barber (an expert on mortuary practice) and Irene Good (a textiles specialist from the University of Pennsylvania). What they witnessed at Subeshi was enough to make any sensitive human being cry. Grave robbers had passed through the gorge only months before and systematically ransacked scores of tombs spread over vast acres of the stark landscape. The cemeteries are laid out on sandy, wind-swept terraces high above the deep gorge. The 1995 team saw body parts strewn about callously by the robbers in their mad quest for anything of value. It is sad that such destruction is being unleashed when there is so little prospect of finding anything of great worth. Then, as now, this was a harsh environment, one where subsistence was the rule of the day and the accumulation of luxury was a virtual impossibility. Although the team was devastated by what had happened to most of the cemeteries at Subeshi, they were relieved to see that the main one which had been excavated by Lu Enguo was in much better shape. They were especially excited to come upon the remains of an ancient house. Scattered about its walls were a large quantity of sherds and other artifacts, including fragments of broken wooden plates. It is astonishing that, to date, no systematic archaeological study has been made of this or any other residential area associated with the prehistoric mummies of East Central Asia.

Collaboration

Victor returns to Eastern Central Asia at least once every year and probably will continue to do so for another decade. The Chinese and Uighur archaeologists of the region are busy with their work from year to year but it is necessary to bring the results of their excavations to the attention of the rest of the world. For this reason, Victor welcomed an invitation in 1995 from the Journal of Indo-European Studies to guest-edit a collection of 11 papers from archaeologists, physical anthropologists and linguists who
were all eager to comment upon the possible ethnic and linguistic identity of these ancient Europeans who had apparently wandered so far to the east. He followed this up the next year with a major international conference on the mummies at the University of Pennsylvania where 50 scholars from 15 countries scrutinized the evidence for the ethnic identity of these mummies. The four keynote speakers included Victor, Luigi Luca Cavalli-Sforza who had done so much to encourage DNA studies of the mummies, and two of the major protagonists concerned with the origins and dispersals of the Indo-European peoples and their languages: Colin Renfrew of Cambridge University and Jim Mallory of Queen's University, Belfast. A month after the conference Mallory suggested off-handedly that in addition to all the specialist and journalistic accounts that had been or were being produced, Victor might consider writing a thorough, illustrated account of the mummies for the general public that presented them in as full a context as possible. As he had published his own study of Indo-European origins with Thames and Hudson and occasionally pre-reviewed manuscripts for them, he suggested that he would be happy to provide Victor with an introduction to their archaeology editor. Victor had been thinking along similar lines for some time and Mallory’s letter prompted him to reflect on the benefits of some form of collaborative effort. Victor’s own area of specialization is Sinitic studies in general and the transmission of Indian literature and religion to western China in particular. This expertise could be augmented by an archaeologist who regularly dealt with the larger issues of the Indo-European languages and European prehistory, especially that of the Eurasian steppe region. Also, Mallory’s more recent research had been in the area of Indo-European dispersals specifically in Asia. But Victor’s return letter, suggesting a collaborative effort, had apparently been the farthest thing from Mallory’s mind when it arrived, and Mallory promptly wrote back, solicitous of Victor’s sanity and introducing him to the term ‘head stagger’. By the time Victor replied that he was very serious about a collaborative effort, however, Mallory had changed to read the excavator’s description of Victor’s ‘Ur-David’ that indicated that like himself he was in his fifties and stood 2 m (6 ft 7 in) tall: the lore of Victor’s ancient friend from Xinjiang who, when living, could have looked Mallory straight in the eyes, was too much for him to resist.

Beyond the Sound Bite

The mummies from Xinjiang, one of the most spectacular archaeological finds of the 20th century, deserve far more than a sound bite; they need a context that places them in the broader picture of the cultural history of Eurasia. And the understandable hype, the journalistic compulsion to make everything bigger, older (almost always ‘older than the pyramids’) if one wishes to attract tabloid notice), first or revolutionary, needs to be tempered with some accuracy. For example, the mummies have become a news item because of recent archaeological discoveries but, as we have already seen, the well-preserved remains of Europeans had already been discovered in precisely the same region at the turn of the century and had been published in the dramatic accounts of explorers such as Aurel Stein and James Bergman. The mummies have also been presented as if they were the unique evidence of Europeans in western China when there is far more abundant evidence, although not nearly so dramatic, in the hundreds of unaccompanied skeletons recovered from the same region and in the well-known references in Chinese annals to people who looked like monkeys, unflattering descriptions which European scholars have long seized upon to indicate themselves. One also needs to emphasize the fact that the mummies from East Central Asia are not the products of deliberate embalming techniques such as found in Egypt or closer afield in the Iron Age tombs of the Altai Mountains; rather, they are the results of burial in an arid climate whose preserving qualities have often been enhanced by the salt content of the soil and bitterly cold winters. Nor do the mummies constitute a single culture or physical type but derive from a range of cultures, periods and peoples who inhabited the region. If we are to understand the significance of the mummies and the problems their existence poses, we need to step back first and consider the mummies and the territory in which they are found in as many contexts as possible.

Questions and Contexts

You are at a party and the person standing next to you begins: ‘An Englishman, a Scotsman and an Irishman walk into a pub....’ We have heard this type of joke countless times before, our background knowledge or, better, the ethnic stereotypes we have endured over the years, prepare us to understand (or brace ourselves for) the punchline when it comes; whether we find it funny or insulting is another thing altogether. But consider for a moment that you are trapped in a corner of the same party and someone pins you against the wall and begins: ‘A Kuchean, an Agnean and a Korstanian walk into a pub....’ While such a joke might leave a Sogdian camel-driver rolling on the floor, the odds of the average listener getting the joke, much less laughing at the punchline, recede to the minuscule. The point is, whether we are into Irish jokes or Korstanian ones, we cannot understand what is going on unless we understand their cultural context. The same applies to understanding the Tarim mummies. We have no intention of dragging the reader straight into the mummy galleries of the Xinjiang museums and then, only after we have displayed our ‘punchlines’, informing our audience what the story was really all about. We are going to take it slowly, not just because that is the easiest way to introduce our subject, but also because the discovery, prehistory and history of East Central Asia is such a fascinating and little-known story. The mummies are centre stage but they are not the whole play. We will try to answer the following questions:
Where were the mummies found?
First of all, we need a map (Chapter One), but a map of the lands in which the mummies were buried is hard won. So remote from both the Greek and Chinese worlds was East Central Asia that both traditions regarded it with the monstrosities and demons that imagination supplies when geographical knowledge falters. It was only in the first centuries BC and AD that eastward-probing Greeks and westward-advancing Chinese penetrated the geographical mists that surrounded their own worlds to discover one another. We must, therefore, follow the earlier tracks of Herodotus, Alexander the Great and lesser-known figures such as the 'time-traveller' Aristides or the more mundane caravan agents of Maes the Macedonian, who pushed Greek knowledge of the world eastwards, so that by the first centuries AD a Greek geographer could draw up a map of the world that acknowledged the existence of the land of the mummies. Discovery was not just one way however, and we will have good cause to review the incredible wanderings of the indefatigable explorer and ambassador of the Han dynasty, Zhang Qian, and the military adventures of General Li Guangli, the brother of the emperor's favourite concubine, who opened up the way west. The main arena for this process of mutual discovery was the Tarim Basin, the territory that would prove to be both the central and most difficult section of what came to be known as the Silk Road. We will see how the mummies occupied the midpoint of the most important overland trade route in Eurasian history.

Who occupied the land of the mummies?
The discovery of the Tarim Basin by literate civilizations permits us to draw on the evidence of written sources to construct a historical picture of the land of the Tarim mummies and its peoples (Chapter Two). Our sources will be primarily Chinese, often snippets of information that were 'wired' back to the central chancellery of the Han and later dynasties. From these reports we can construct something of the history and ethnography of the major players of East Central Asia. These include those populations who inhabited the oasis towns of the Tarim such as Qaşqâr, the westernmost emporium of East Central Asia; Kucha, the largest of the oasis towns of the north; the ancient kingdom of Khotan, the capital of the southern Tarim; and Krorian or Loulan, the statelet that emerged near the barren wastelands around the great salt lake of Lopnur in the east, a territory that has yielded the most impressively preserved of our mummies. Our survey will also include the great nomadic tribes who occupied or swept through the region, in particular the Xiongnu, the masters of the Tarim and the eastern steppe who are often linked to the best known of Eurasian barbarians, the Huns; the Wu-sun, the major tribal confederation to form in the pasturage lands to the northwest of the Tarim; and the Yuechi, the people who in historical times were forced to make the long trek west from the corridors of frontier China into the eastern realms of the former Persian empire where they founded the Kushan empire, one of the major states of the ancient world. And our final historical context will introduce the Uighurs, the Turkic-speaking population who currently dominate the Tarim Basin and the people most likely to preserve the genetic heritage of the Tarim mummies.

What languages might the mummies have spoken?
As we will be searching for the ethnic and linguistic identity of those mummies who preceded the evidence of historical records, we can have no hope of even conjecturing possible identities unless we are able to establish what languages were known to have been spoken in the Tarim Basin (Chapter Three). It is here that we are reminded that the mummies do not constitute the sole treasure of Taklimakan: the air and climate preserved not only the remains of its peoples (and trees, houses, shrines, artwork, cupboards, tables, chairs, mousetraps, brooms, etc.) but an enormous quantity of written documents that attest to a myriad different languages. In fact, the most linguistically diverse library in the ancient world has survived in the drying sands of the Tarim Basin. All the languages attested in the Tarim Basin belong to well-known language families and we will attempt to place these in the broader context of Eurasian language geography. For the earliest historical period, with the obvious exception of Chinese, all texts are in languages of the Indo-European family that unite the peoples of Eurasia from Ireland in the west to the Tarim Basin and northern India in the east. The linguistic review will introduce the evidence which many believe indicates that the ancestors of at least some of the Tarim mummies originally derived from Europe.

How do the mummies fit into the archaeological picture?
The final context is, naturally, the archaeological background to the mummies (Chapter Four). We must consider the cultural evolution of the region from archaeological sources which appear so far to suggest that East Central Asia was originally settled from the west or north and that it lay essentially outside the orbit of the Chinese world until the first centuries BC. We will also examine the specific archaeological cultures in which the various groups of mummies are found and consider how they relate to the world beyond the Tarim Basin.

How many mummies? What do they look like?
Once we have established the geographical, historical, linguistic and archaeological background, we can begin our examination into the lives, deaths and identities of the mummies. We will start with the physical evidence of the bodies (Chapter Five) and consider how they managed to be preserved and the archaeologically tragic situation which threatens their survival.
Now some might object to our use of 'mummies' to describe what they might dismiss as mere 'desiccated corpses', arguing that unless you have had your bowels and brain removed, been saturated with natron, embalmed, wrapped in linen sheets, stuffed in a wooden case, sealed in a sarcophagus (and preferably were a native Egyptian-speaker), you weren't a 'real' mummy. To this we can only refer the reader to a good dictionary or, perhaps better, a book on mummies such as Christine El Mahdy's *Mummies, Myth and Magic in Ancient Egypt* (A mummy is the preserved body of a human being or an animal, by any means, either deliberate or accidental!) or Aidan Cockburn in the opening of his classic *Mummies, Disease and Ancient Cultures* (Today, the term mummy has been extended to cover all well-preserved dead bodies. The majority of these are found in dry places such as the sands of deserts or dry caves, where desiccation has taken place rapidly, doing naturally what Egyptians did by artifice). This book is about mummies.

What does the clothing of the mummies tell us of their origins?
The Tarim mummies may have entered the world naked but they often exited it well dressed and it might be argued that the preservation of their clothing is every bit as exciting as that of their bodies. It is not just the level of preservation but the detail of the fabrics and weaves as well as the sheer ostentation of their dress that provides clues to the identity of the mummies (Chapter Six). Aside from witches' hats, plain and simple, perhaps most intriguing is the presence of plaid twills which places them in the same category of tartan splendour as the Celts of western Europe. For some, this dovetails nicely with the theory that derives the Tocharians, one of the possible candidates to be equated with the mummies, from western Europe, and we will have to examine how credible this theory actually is.

What do their skeletal remains and DNA tell us of their origins?
The final physical clue as to the identity of the mummies rests with their own bodies and the skeletal remains of the less well-preserved members of their communities (Chapter Seven). We will attempt to sort out the details of the anthropological analyses of the various groups of mummies and the attempts that have sought to link them to other populations in Eurasia. This will also force us to consider to what extent the blood of the mummies still runs through the veins of the current population of the Tarim Basin. We will, in addition, examine the results of the recent application of DNA testing to trace the closest genetic relations of the mummies.

Are the mummies Indo-Iranian?
By now we will have accumulated enough evidence to round up the most likely suspects and run them through an identity parade to determine how well they fit the bill as the ethno-linguistic groups behind the mummies. The first of these is the Indo-Iranians (Chapter Eight), the largest of the subgroups of the Indo-European world, whose speakers, in a variety of local guises, we know to have both surrounded and penetrated the Tarim Basin. What is the evidence that these people were in the Tarim Basin far earlier than our historical records would have us believe?

Are the mummies Tocharians? Who were the Tocharians anyway?
We must then turn to our final suspect, the Tocharians, the most elusive of the ancient Indo-European peoples (Chapter Nine), and attempt to establish what precisely we know of their language, culture and origins, and how they may lie behind the identity of the earliest mummies.

What happened in East Central Asia?
By now we have assembled all the evidence presently available to us to attempt a reconstruction of the ethnic history of the land of the Tarim mummies (Chapter Ten).

What role did the mummies play in the rise of Chinese civilization?
This book is not just about the identity of the mummies but also their contribution and that of their closest relations to Eurasian culture. The world's oldest surviving civilization still flourishes in China long after those of Mesopotamia, the Indus Valley, Central America (the Maya and Aztecs), and South America (the Incas) have all disappeared. The contribution of China to world culture is so massive (we could begin our examples with the very paper this book is printed on and the cash or cheque that was employed to purchase it) that one could well become predisposed to accepting that China did evolve in isolation from the backward world of European barbarians. The mummies of East Central Asia, however, challenge this assumption and in our attempt to place the mummies in the cultural history of the peoples of Eurasia (Chapter Eleven), we will also seek to discover the contributions of the prehistoric West to the ancient East.

A Note on Transliteration and Reconstruction
Throughout this book we have transliterated letters belonging to non-Roman alphabets (Chinese, Indo-European etc.) to give them approximate values in Roman letters. In addition, an 'h' indicates where words are not actually attested in the given language but have been reconstructed through comparative philology; subscript figures or letters accompanying an 'h' (as in χοῦς 'sheep') indicate laryngeals which have been reconstructed for Proto-Indo-European.
CHAPTER FIVE

The Mummies Themselves

We have seen how Europeans and Chinese first learned of the lands of the Tarim mummies and we have briefly reviewed the evidence for the cultural history of the region and both the ethnic and linguistic groups known from our earliest historical sources. Now that we have established a context for our story, arranged the scenery and the lighting as it were, we can bring the main subjects of our book, the mummies themselves, back to centre stage. In this chapter we examine the reasons for their mummification, their numbers and their basic physical appearance while in the next two chapters we will consider the clothes they wore and wore, their possible genetic relations and their contributions to the modern population of the Tarim Basin.

How to Become a Mummy

The mummies of the Tarim Basin are primarily a product of nature rather than culture. It is the hot desiccating sands of the Taklimakan, the world's second largest desert, that mainly explain their remarkable preservation.

In most regions of the world when appropriate post-mortem steps have not been taken, death unleashes the digestive bacteria of the human gut which transform the corpse into a chemical factory producing gases and noxious fluids that flow out of the orifices, including the mouth and nose. The body can swell to two or three times its normal size, explosive pressures force the mouth open and the bloated tongue may protrude. The key problem, then, is the soft tissues, especially the entire digestive system, which must be removed to prevent rapid decomposition. Where we find artificial mummification, we usually find evidence for the removal of the guts, also often the brain, the remaining cavities might then be washed of blood and stuffed with some substance such as dried straw or, in the case of ancient Egypt, linen, to preserve the overall shape of the individual. The people of the Tarim Basin could have undertaken such remedies against decomposition had they wanted to. Recall that at the site of Zaghuiluq where some of the more spectacular mummies were recovered, those burying the deceased had removed the bone from the foreleg of a horse and stuffed the skin with reeds. But there is so far no evidence among the Tarim mummies for deliberate evisceration or removal of the brain.

Only two slight pieces of evidence suggest attempts to enhance the preservation of the deceased artificially. Multiple chambered tombs such as those at Zaghuiluq positioned the deceased resting on wooden planks so that that the dry air could circulate over and under the entire body. This permitted more rapid evaporation of moisture and, generally speaking, there is a rough inverse correlation between depth of tomb or covering (amount of exposure to the dry air) and the level of preservation. At Qiweiguh, for example, the female and child whose remains were mummified had been buried at a depth of less than a metre while deeper graves yielded only skeletons. Moreover, traces of a fatty substance containing animal protein have been recovered from some of the best-preserved Zaghuiluq and Subeshi mummies, as well as from the 'Beauty of Kroran'. Tian Lin, the conservator of the Urumchi Museum, has suggested that this substance might have served as an anti-bacterial agent. The actual substance has not been identified but Elizabeth Barber recalls that a thin fish-paste was applied to some of the mummies of Peru (although here it may have served only as a binding for the thick mud paste that encased the body). The substance used to 'bast' some of the Zaghuiluq mummies may have been ghee, a buttermilk like substance regularly employed in ancient India in ritual acts. It should be noted that the ethnic Chinese did employ artificial techniques of mummification in both the Han period and the much later Ming period (AD 1368–1644). Artificial mummies have been recovered from Hubei province (far to the east) and in Hunan (far to the southeast), where tombs were dug especially deep, densely sealed, lined and packed with charcoal, and chemicals such as mercury were applied to the bodies to prevent decay.

It is primarily, then, to the arid environment of the Taklimakan that we must look for preventing decomposition of the body. In a region where the annual average humidity is only about 5 per cent and it rains on average 35 mm per year, the production of bacteria is inhibited and putrefaction of the corpse ceases or is greatly retarded. The evidence for mummification indicates that the environment slowed down but in many cases could not instantly halt the natural processes of bloating. Mummies whose mouths are wide open and whose tongues protrude grotesquely are common enough. The people of the Tarim were well aware of this process and attempted to prevent the opening of the mouth with chin straps although, when made from an expandable material such as wool, they could not always be kept tight enough to hold the jaw in place against the swelling pressure exerted within the body. The need for holding the jaw shut might also explain why so many individuals are found wearing headdress, which often included a strap under their chins.
For the preservation of the flesh, Egyptian embalmers had recourse to natron, a hydrous sodium compound, i.e. a salt. Although it had originally been presumed that the bodies of the deceased had lain in a solution of natron, a sort of salty bath, it has since been proved that the natron was applied dry. How long precisely might vary but it fell well within the period of 70 days that historical sources suggest was required to produce a mummy. The curative properties of salt are, of course, well known and are also applied in the preservation of meat, which, from the viewpoint of a carnivore, is precisely what we humans represent. The ability of salt to dehydrate the body and retard bacterial growth is what helps prevent decomposition. In the Tarim Basin, such conditions could be found naturally, as the region is in essence an enormous dry sea-bed whose inflowing rivers have deposited a tremendous quantity of salt. In the vicinity of Lopnur, the great salt marsh, are many deposits of salt and southwest of it we find the cemetery at Zaghuinluq, now largely destroyed not only by treasure hunters but also by locals searching out deposits of rock salt. Thus, a combination of arid conditions and the high, at times almost pure, salt content of the soil has led to the preservation of the Tarim mummies. It might be noted that there are instances where it would seem that salt was the primary cause of mumification. Among the more recent discoveries of mummified remains (here of Mongoloid physical type), are two well-preserved dried-out bodies of gold miners of the Qing dynasty which were found in an abandoned mining shaft to the north of the Tangri Tagh. They had been tied with ropes, and their tools and even permission to pan for gold were found along with their clothing. Chinese archaeologists have suggested that a tight probably broke out over wages which led to the killings. Although the soil was wet, it contained sufficient salt to halt the growth of bacteria.

Time to Die?

There has been some debate among Chinese archaeologists as to whether there was also a seasonal factor in the preservation of the mummies. Wang Binghua, for example, has suggested that the freezing winter, which can drop to −30°C, might have inhibited the growth of bacteria in the mummies, hence the survival of some burials over others might be an indication of the season of their interment. He Dexiu, however, who excavated the more recent mummies from Zaghuinluq, has suggested that it was the summer heat that would have been most effective as this would have provided conditions in which the mummies would have dried out all the faster. The fact that the Tarim Basin is dry all year round (at Zaghuinluq the amount of evaporation is 135 times greater than the amount of precipitation) and that — as any forensic pathologist will tell you — one might expect the summer heat, when temperatures can reach +42°C, to accelerate rather than inhibit bacterial growth, provides better support for Wang’s theory. In addition, if we employ clothing as circumstantial evidence for the season in which people were buried and preserved, we will see that quite a few of the better-preserved mummies appear to have been dressed for the winter cold (e.g. at Zaghuinluq and Subesht).

How Many Mummies?

Western publications have concentrated on a handful of the better-preserved, certainly better-dressed, mummies yet their numbers far exceed the small number that have graced the pages of the National Geographic or the Sunday supplements. For example, between 1959 and 1975 the Xinjiang Museum excavated 303 partially or well-preserved corpses from the cemetery at Astana near Khocho, the town that later became the Uighur capital in the Turpan Basin. The graves date from the 3rd to 7th centuries AD and are apparently of Mongoloid extraction. Unfortunately, few of these have survived intact. Our two salt-preserved gold prospectors from the Qing (Manchu) dynasty of the 17th–19th centuries have also helped fill out the roster of mummies. A rough count based on an updated survey by Wang Binghua would suggest that about a dozen sites excavated over the past 40 years have yielded in various degrees of preservation something on the...
order of 500 mummies. To this we would have to add those reported in the
expeditions in the earlier half of this century. These are occasionally depicted
in the illustrated sections of the early reports but, as Folke Bergman relates,
transportation difficulties rendered it impossible to bring the mummies back
to Europe for scientific examination. Anyway, these numbers in many ways
are still only a small proportion and readers sensitive to heritage issues may
find what follows deeply disturbing.

The overwhelming majority of the Tarim mummies either have been or
are currently in the process of being destroyed. In some instances, ripped
from their graves and strewn over the ground like grotesque props from
George Romero’s Dawn of the Dead, literally hundreds of corpses could be
found rotting in the sun at Ordék's necropolis or, more recently, at
the cemeteries of Sampul and Subeshi. These are the human residue of
treasure-seekers, salt-miners, farmers searching for firewood, and modern
populations clearing ancient cemeteries of the heathen dead to bury the
more recent and cherished ‘believers’. Even if a mummy makes it past this
first hurdle in its survival, the next, the lack of serious facilities for conserva-
tion, has radically reduced the number that actually reach environmentally
protected museum cases. And the mummies hardly need look to the
museums for sanctuary if they are to be unceremoniously dumped in the
ceilars to rot.

It is suspected that in some cases certain archaeologists and officials with
their own political or racial agenda have been bluntly hostile to the
discovery and preservation of these ancient ‘foreign devils’, especially when
equally misguided Uyghur nationalists seize on them to demonstrate a more
ancient claim to their territory than history allows. Now, before Western
readers react with righteous outrage, they might pause back issues of the
letters column of the Iris Times when the major Viking settlement of
Dublin was being threatened with obliteration and see how some correspondents
shared a very similar attitude to the remains of ‘pagan foreigners’. Far more explosive, indeed outright deadly, are the battles
between Hindus and Muslims in India over whose tradition constitutes a
national heritage worth protecting. As archaeology, originally defined as
the study of the origins of peoples, by its very focus attracts so many racial
or nationalistic agendas, we should hardly be surprised when some Chinese
officials appear to prefer that the mummies of these troublesome foreigners
dissolve under conditions of not-so-benign neglect. From their viewpoint,
these were, ‘barbarians’, who contributed nothing to Chinese civilization in
the past and represent an unnecessary distraction from its real
achievements.

Sometimes the situation is so bizarre that it can only be true: access to an
important set of mummified remains in the Xinjiang Museum in the
provincial capital itself is blocked because the museum has let out half its
space to a furniture store and has been forced to seal up its own storerooms
with display cases! (Moreover, two-thirds of the parking lot in front of the
museum has been leased to a truck and van dealer.) It fares no better with
human skeletal remains at the enormous multi-site cemetery of Chawughul,
only a hundred of the original thousand skeletons have been preserved
for analysis and there are eye-witness accounts of the remains being tipped
over the ridge on which the cemetery is located.

Altogether, we should probably be thinking in terms of at least several
thousand mummies (not to mention tens of thousands of skeletons) that
have already been uncovered in the Tarim Basin. Even with the enormous
amount of destruction of human remains in Xinjiang, there still should be
a very large sample of mummies calling for specialized study. What is so re-
markable, however, is that apart from a few exceptions where Chinese
scientists have undertaken admirable thorough examinations, there actually
has been little analysis of these outstanding human relics. Only one or two
have received the royal scientific treatment of Oss, the Tyrolean Iceman,
or the bog bodies such as Lindow Man. If one is going to accede to the
demands for scientific investigation and public education, hence admitting that
there are legitimate reasons for removing the mummies from their graves
rather than re-interring them, then there is clearly a responsibility to provide
the highest standards of conservation and analysis. We will turn to those few
about which something more can be illustrated and said.

The ‘Beauty of Krorän’
The earliest Tarim mummies were those excavated at Qawrughul cemetery
and another site near the northern edge of Lopnor in 1977–1980. The dates
run from c. 1800 BC down to the first centuries BC. Among the earliest,
verified by radiocarbon dating, is a woman, popularly known in Uyghur as
Kroran Gizaali the ‘Beauty of Krorän’ (pl. IV) as she was found on the banks of the
Towán River in what later became the kingdom of Loulan (in Chinese)
or, more properly, Krorän. She had blondish-brown hair and was
dressed in wool and fur. Her hair, which was about 30 cm [1 ft] long, was
rolled up within a distinctive headress made of felt over a woven base
and topped with two goose feathers. Scientific examination of the body indicated
that she suffered considerably from head lice about her hair roots and pubic
region and there were also traces of dirt at the base of her eyelashes
and eyebrows, so much so that the Chinese scientists who examined her
wondered how they could have been tolerated by any living human being (of
18 mummies examined from the American Southwest, 8 also revealed head
lice). Remains of one bed bug (Cimex cinctularis) were also recovered. Her
age was about 40–45 years and she measured 1.52 m (5 ft) which, taking
into consideration some shrinkage, would suggest a live height of 1.56 m
(c. 5 ft 2 in). Her dehydrated body weighs today but 10.7 kg or 23.5 lbs (the
recommended ‘live’ weight for a small-framed woman of her height would
be 47–52 kg or 104–115 lbs) which provides a graphic reminder of the extent
to which human body mass consists of water (as a general rule the desiccated
weight of a mummy represents about 25-30 per cent of its live weight). Her skin was red-brown and smooth, and both the outer and inner layers of the skin were still in a very good state of preservation. An examination of her muscle tissue indicated that the level of preservation equalled if not excelled the level expected had she been preserved in formaldehyde; similar results were obtained from a large battery of scientific tests to which her skin, hair, muscles and internal organs were subjected. Examination of her lungs revealed a large quantity of charcoal and silicate dust; the combination of wind blown sand and the smoke from indoor fireplaces did nothing to improve her health. She had been dressed in a woollen shroud and her feet were covered with leather boots, the fur turned inside. Accompanying her were a comb and a long, narrow straw basket. When discovered, her face and upper body were protected by a large woven winnowing basket. Above that was a 30-cm (1-ft) thick layer of branches, then a 10 cm (4 in) layer of reeds, then another 10 cm (4 in) layer of branches. The 'Beauty of Kefrén' has become an icon of the Uyghur people who have claimed her (without any serious linguistic or cultural foundation but not without some genetic basis) as 'the mother of our nation' and her reconstructed face adorns national (Uyghur) posters.

Of equal antiquity, although not quite so well preserved, are the mummies of a woman and a child from the cemetery at Qawrigul. The woman was about 20 years old. She had been wrapped in a woolen blanket and the only clothes she wore were a felt hat and fur shoes. Only her head is well preserved. Her hair and striking eyebrows are clearly blonde and red ochre had been applied sparingly to her face; particularly noticeable are two round dots on her forehead above her brows.
Krorán

At site L.F. in his excavations in Krorán, Aurel Stein uncovered several burials compatible with those from Qawanqul. The best-preserved was designated L.F.1, where a fence of planks marked a grave. At a depth of over a metre, Stein encountered the cow-hide covering of a coffin fashioned from the trunks of a teakhrak tree. Within was the burial of a young man wrapped in a woollen shroud and wearing a leather moccasin. His hair was dark and wavy and there was a large cut over his left eye which may have been the cause of his death. Stein wrote:

It was not without a strange emotion that I looked down on a figure which, but for the parched skin and the deep-sunk eye cavities, seemed like that of a man asleep, and found myself thus suddenly brought face to face with a representative of the indigenous people who had inhabited, and no doubt had liked, this dreary Lop region in the early centuries of our era.

Stein compared him physically to the modern populations of the Hindu Kush and Pamirs (Homo Alpinus) while he was recently described as a 'Bohemian bungler' in a more popular archaeological magazine. The fact that his head was covered with a grain basket, and that he was wrapped in the same type of plain weave seen on the 'Beauty of Krorán' and accompanied by a bundle of cephedra renders him comparable with the other mummies of this region. The mummified remains of a young girl were uncovered at L.F.2 while a middle-aged man was found at L.F.4.

Now any of these mummies should have found coverage the equivalent of today's Sunday supplements yet they did not. Stein tells us why:

I greatly regret that the circumstances made it quite impossible to remove these mumified representatives of the old Lou-lan population. Even if we had disposed of sufficient time to improvise suitable cases from what ancient timber was at hand, no transport could have been spared to carry them with us to the land of the living. So I had to rest content with having the coffins carefully closed and the graves filled in again, putting blocks of clay on the top, to ward off as long as possible the ravages of wind-erosion.

Similarly, the feathered cap discovered with one of the burials (Nr. 36) from Folke Bergman's excavations in Krorán would also seem to belong to the same tradition as our 'Beauty'. Here an old woman was found in a hollowed-out log coffin and we can let the excavator himself describe her:

On the surface of the hill, particularly on the slopes, there were a lot of strange, curved, heavy planks and everywhere one stumbled across withered human bones, scattered skeletons, remains of dismembered mummies and rags of thick woven materials. Some of the mummies
had long, dark hair and incredibly well preserved faces, even an almost fair complexion. From others a ghastly-looking skull grinned out of a partly preserved blackened skin. I shall never forget the sublime expression on the face of a feminine mummy! On the dark flowing hair, parted in the middle, she wore a yellow pointed felt cap with red cords; her brow was high and noble, her eyes slightly closed, as if she were on the point of falling asleep; she had a fine aquiline nose and thin lips, slightly parted, and showing a glimpse of the teeth in a quiet timeless smile. How long had this 'Lady of the Inscrutable Smile' defined the roaring sandstorms of the desert, how often had she listened to the whistling of the wind in this 'Colonnade Hall of the Dead', how long was it since she closed her eyes forever to the dazzling and burning sunlight?

In his more prosaic description of the burial we find that Bergman had come across half a tree-trunk coffin that had been covered with ox hides rather than timber planks. Within was the mummy of an old woman whose long, grey hair had been parted in the middle. She was wrapped in a mantle of dark-brown wool and along the right side of the mantle, the fabric was tied up into three bags, each containing twigs of ephedra. The mantle was fastened by a series of wooden and bone pins. On her head was a cap of dark-brown felt with an outer cap of yellow felt decorated with two feathers. She wore raw-hide mocassins with lambskin soles. Among the grave offerings was a wooden comb, a primitive 'rag doll', a ball of woollen yarn and a link of dark-brown hair.

Clearly related to these burials were those covered from Örgök's necropolis, the surface of which was covered with 'withered human bones, scattered skeletons, remains of dismembered mummies, and bags of thick woollen materials.' The cemetery, numbered 5 in Bergman's system of reckoning, yielded the following mummies (indicated by letters).

Grave 5A, which comprised a mummy surrounded by the two sides of a split coffin, was that of a young man some 1.7 m (5 ft 9 in) tall. His hair was dark brown and tied back with a red string. His teeth were in good shape, not so his forehead where there was an obvious fracture. Although Bergman interpreted his wide grimace as a sign of his violent death, it is more likely to have been the result of post-mortem distortion of the facial features.

The young man wore a felt headdress with five feathers inserted into it, a loin cloth, mantle and ox-hide shoes, the last apparently never worn before. There was a small bag of wheat tied up in the top of the mantle near his head. A basket by his thigh contained millet porridge. There were calves' ears by his throat, grains of wheat and ephedra strewn down the decomposed centre of his body, and he clutched a tamarisk twig in his right hand. Under him were four arrowshafts without their heads.

The other human remains from this cemetery were in too poor a state to require description. All that remained of Grave 5F were the legs and feet.
which were described as brown and hairy. The corpses in graves 5D and 5E had been dragged from their coffins by grave-robbers to decompose, and the latter was missing its head, but these other tombs all resembled Grave 5A. Among the human remains strewn on the hill were those of a young woman (from Grave 5K) whose head was well preserved (ill. 102). She had dark-brown hair, parted in the middle, and wore a headdress of yellow felt.

Qizilchoqa

This cemetery situated near Qumul (Hami) was excavated in 1978, 1986 and 1991 by the Xinjiang Institute of Archaeology. Of the 114 graves opened during this period, 11 have been regarded as complete corpses (mummies) and there are an additional 60 less well-preserved bodies. In 1995–1996 there were hurried excavations of additional graves, some of which did yield mummies, but with neither word nor sign of their state of preservation. So far the range of radiocarbon dates suggests that the cemetery was in use during the period c. 1400–800 BC.

Among the best preserved of the mummies is that from Grave 24, dubbed here the ‘Ravishing Redhead’ because of her long red hair (actually brownish-yellow and tied in a plait) but more mundanely known as the ‘Hami Mummy’ in Chinese scientific literature. She was curled up in the flexed position. She was about 35 years old and when alive would have stood about 1.6 m (5 ft 3 in) tall (her ‘dead’ height was 1.56 m or 5 ft 1 in). She has a narrow face, deep-set eyes, sharp nose and thin lips. Her hair is plaited in thick braids and trace-element analysis of her hair revealed remarkably large amounts of calcium. Possible reasons for this are many, including diseases such as hyperparathyroidism which decreases calcium in the bones while increasing it in the blood.

A man, discovered in the late 1970s, is also on display in the Qumul Museum. His hair is reddish-brown, streaked with grey and piled on top of his head. He was about 40 years old, has a long, narrow head with deep-set eyes and wears a bronze earring. His long fingernails attest that he was not a life of hard physical labour but that he was probably of noble birth. Like so many, he wears leather boots that go above the ankles.

Another mummy discovered in the late 1970s is that of a young female, about 18–20 years old. She has a rather flat face with high cheekbones and her hair, like that of the man, is reddish-brown. Her teeth show the pronounced overbite that is a European feature. She too has very long fingernails that had not been trimmed for a while and even though our account must be made for dehydration she still appears to have been extraordinarily emaciated, as though she had been ill for a long time.

Finally (and not on display but deposited in a storeroom) we come to the well-preserved mummy of a young woman in her twenties with dark hair. She stood under 1.5 m (5 ft) tall and her most distinctive feature is the elaborate blue tattoos on her right hand.

Zaghunluq

The mummies from Zaghunluq are dated c. 1000 BC, or possibly somewhat later to c. 600 BC, and are among the most spectacular recovered so far. We have already recounted the discovery of a male (‘Ur-David’), several 104. ‘Ur-David’ (‘David the Younger’), immediately after removal from its tomb.
females and a child in the same tomb. In his excavation report, the excavator claimed that the man stood close to 2 m (6 ft 7 in) in height, an observation that greatly impressed one of your authors. Unfortunately, this estimate would appear to have been considerably exaggerated unless the skeleton belongs to the 'incredible shrinking man', since the anthropological analysis of his stature indicates a 'dead' height of 1.76 m (5 ft 9 in); we can give him another inch or so when alive but no more. Well, how tall is tall anyway? While we may recall the report of the Sinehalese trader to the Seres who described the people of the region as exceptionally tall, we should remember that this is purely relative and that, until the recent introduction of high-protein diets from infancy onwards, human stature had not increased markedly since the Neolithic (people were somewhat taller during the Palaeolithic). In Eileen Murphy's study of south Siberian (Caucasoid) steppe populations from the Scythian-Sarmatian period, where the number of burials provides a useful statistical sample, males averaged 169±3 cm, i.e. about two-thirds of all males ranged between 1.64 m (5 ft 5 in) and 1.78 m (5 ft 10 in) and the full range in males was 1.55 m (5 ft 1 in) to 1.8 m (5 ft 11 in). The human skeletal remains from 1,373 burials at the large cemetery in Shangma village (near Homa City in southwestern Shanxi Province) have been studied in detail by Chinese physical anthropologists. Since the dates of the Shangma cemetery are roughly contemporary with those from Zaghunluq and since the occupants of the cemetery consist of a combination of North Asian and East Asian Mongoloid types, data from this site offer a valuable comparison with those from Zaghunluq. The average height of males from Shangma was approximately 1.65 m (5 ft 5 in) and they ranged from about 1.47 m (4 ft 9 in) to about 1.79 m (5 ft 10 in). 'Ur-David' would have been near the top of the scale for a North Chinese. 'Ur-David' stood 3–5 cm (1.2–2 in) taller than the average Bronze Age Irishman (1.73 m or 5 ft 8 in) and was taller than the largest of the Mediterranean Bronze Age people such as those from the royal shaft graves at Mycenae (averaging 1.72 m or 5 ft 7 in); contemporary Bronze Age males from Italy averaged about 1.68–1.69 m (5 ft 6 in). 'Ur-David' was on the tall side for his time but nowhere near the stature suggested by his excavator.

'Ur-David' lay extended on his back, his knees slightly bent and his hands lying across his abdomen, held in place by cords braided of red and blue strands of yarn that bound his wrists (pl. II, ill. 105). His hair was light brown streaked with occasional grey and he had a 2 in trimmed beard indicating that his society shaved, but hardly daily. In this he belonged to a similar tonsorial tradition to his male European counterpart, because it is also with the Middle and Late Bronze Age in Europe that we frequently find bronze razors on archaeological sites and accompanying graves. His hair was braided in two plaits (30 cm (1 ft) long and 5 cm (2 in) thick) that extended down his front. In an attempt to prevent his mouth from falling open, a woollen strap had been passed beneath his chin.

105. Blue and red cord around the wrists and five-coloured cord around the wrist of 'Ur-David'. Note also the leather thong about the middle finger of the left hand.

106. Ochre spirals on the forehead of 'Ur-David'. 
His face had been painted with yellow ochre. Spirals were found on each temple and have been variously interpreted as sun-burners (with even further extrapolation to sun worship typical of the early Iranians) or possibly schematic rams' horns, a very frequent motif in steppe art. The use of ochre in burials is a tradition which goes back to deepest antiquity and is found widely over Eurasia. Particularly prominent in the steppelands of the Ukraine and southern Russia, the major Copper Age culture, the Yama culture, is also known as the 'Ochre-grave culture' as burials are frequently saturated in ochre. Interpretations of this practice are numerous (and invariably highly speculative), including suggestions that the colour of the ochre indicates life (red ochre is the colour of life-giving blood), death or the colour of the soil, or that the custom was a prophylactic against death (here obviously unsuccessful), a method of purification, or a means by which one might alter the appearance of the deceased through adornment to make them ready for the afterlife. Accumulations of ochre in the wrinkles about the eyes of 'Ur-David' might suggest that it was applied before he had died (and could screw up his eyes) but Paul Barber suggests that it is more likely that the ochre worked its way into the wrinkles during the post-mortem changes to his face before dehydration and total rigidity had set in. His grave was accompanied by two small bone spoons with a dish of ochre pigment, which would seem to indicate further that the ochre was applied after death. Other evidence for facial adornment is to be seen in the coloured strings of wool that apparently served as earrings.

Accompanying the main male burial were three females, one of which was also in an exceedingly fine state of preservation (pl. III). As with 'Ur-David', estimates of her height (1.9 m or 6 ft 4 in) by her excavator are wildly exaggerated and she is officially measured at 1.5 m (5 ft 3 in). Her height, then, would not have been exceptional and Eileen Murphy's study indicates that the average height of females in southern Siberia at this time was about 1.56 m (5 ft 1 in), i.e. 1.43 m (4 ft 8 in) to 1.54 m (5 ft 1 in) with the tallest woman set at 1.7 m (5 ft 7 in). If we wish to continue the comparisons that we made for males, then we could note that women in Bronze Age Ireland averaged 1.65 m (5 ft 5 in), Bronze and Iron Age Italian women averaged about 1.56–1.58 m (5 ft 1 in–5 ft 2 in), and the tallest of our Mycenaean 'princesses' was 1.61 m (5 ft 3 in). A woman of Mongoloid physical type and very delicate features, found buried in a Buddhist stupa near Subeshi (in Kucha district), has been claimed to have stood 1.9 m (6 ft 4 in) tall (incidentally, the Guinness Book of Records awards the tallest woman category to the Chinese Zeng Jinian who measured 2.48 m or 8 ft 2 in).

The woman from Zaghuunluq was about 35 years old. She had light-brown hair streaked with white. Her hair was parted into four braids, two of her own hair and two yellowish-brown braids that had clearly been obtained from another (and younger) woman; red wool had been woven into the ends of the braids. Her face was also painted, with a white stripe between her eyes and spirals on either side of her nose and even on her eyelids. Similar spiral motifs are to be found on other objects recovered from this cemetery, e.g. wooden spindle-whorls and on textiles. Like the male her hands were tied at the wrists as they lay on her stomach. Although her mouth had been strapped it had fallen open and her tongue protruded.

Of the two other women in the tomb, one had decomposed entirely into a skeleton while portions of the upper and lower parts of the third woman were still preserved.

The baby boy (known as 'Baby Blue') buried in a small pit a few feet away from the main tomb was aged no more than 3–6 months and was in remarkable condition, his tiny head with blond or light-brown hair peeking out of his blue woollen cap (pl. V). His nostrils had been stuffed with red wool. The doll-like appearance of the child is enhanced by the flesh-coloured paint that had been applied to his face. Most remarkable were the blue stripes covering his eyes (Elizabeth Barber has suggested that these might indicate their colour). We might also keep in mind the practice of placing coins on the eyes of the deceased, a tradition in Central Asia that goes back at least to the Parthians and is also known in Mongolia. He was accompanied by what appears to be a sewn-up sheep's udder that served as a primitive baby-bottle and still preserved some milk solids.

The more recent (1989) excavations at Zaghuunluq by He Dexiong uncovered what he has interpreted as a series of human sacrifices (adult women and a child) that were made to accompany a mature woman (pl. VII), who herself had been severed into several pieces (at the head and across the mid-section). She measured 1.7 m (5 ft 7 in) tall, with salt-and-pepper hair parted into two braids and tied up with red woollen string at the ends. Her thin black eyebrows appeared to have been recently painted. Her nostrils had been
plugged with tufts of wool to prevent post-mortem ‘seepage’. Moon-shaped tattoos can be seen on her eyelids and oval tattoos on her forehead. Tattoos are also found covering the back and wrist of her left hand (pl. VIII). Her fingers appear to be exceptionally long.

Above her in the tomb, inserted face down, was the ‘Scream Baby’, a child probably over a year old (he had his lower incisors) who measured about 72 cm (2 ft 4 in). His blond hair included a very neatly woven braid on his head. To add to the gruesome tragedy, the child’s chin had been strapped with a woolen band but it had failed in its task and the child’s mouth was wide open. Equally poignant perhaps were the traces of tears and mucus on the infant’s lower cheeks and below the nose. The open mouth and tears prompted the excavator to suggest that the baby had been inserted head first into the tomb of the older woman when he was still alive. But the open mouth, as we have already argued, could just as easily be explained by post-mortem changes and the tears and mucus might well have been produced by an ailing child before he died. He Dexi’s explanation is not one we would like to contemplate although it is still possible.

The woman who accompanied the burial was about 20–25 years old. She had long yellow-brown hair and her eyes had been gouged out. As her arms and legs were missing, she only measured some 80 cm (2 ft 7 in) long. Again we are confronted with different interpretations. The excavator prefers to see her as part of the interment, a form of human sacrifice, and there is certainly enough evidence for that across the steppelands during this same period. On the other hand, the mutilation – as was also the case with the main burial – may have been accomplished after burial. We know that throughout the Shang and Zhou periods, the desecration of the ancestors of one’s enemy was a frequent pastime and this behaviour could well have extended to the

Tarim Basin where the preservation of the dead might also be seen as an ancestor cult (worth violating). Alternatively, the missing limbs might have a natural explanation; the deceased could have been buried elsewhere and only later removed to the tomb in which she was discovered, by which time her joints had decomposed and the limbs had been left behind (there were no chopping marks on her bones that might suggest deliberate removal of her limbs).

Subeshi

In the period 1991–1992 excavations were undertaken by the Xinjiang Institute of Archaeology at Subeshi where Lu Enqiu is reported to have seen 23 corpses of which 7 were well preserved; of these, 14 reached the museum in Ürümqi but the lack of proper conservation represents a great danger to their continued survival. The remains date to about the 5th–4th centuries BC.

The mummies included a man who stood about 1.65 m (5 ft 5 in) tall. Capillary action, a normal process of decomposition, had forced his tongue to stick tightly against his upper teeth. His hands rested on his abdomen. Another male from Subeshi gives us a fine impression, both with respect to physical appearance and to accompaniment, of what a warrior looked like.
Our 'Hero of Subeshi' was tough-looking, with light-brown hair beneath his felt helmet. He wore a very thick sheepskin coat (recall the arguments for winter burial, pp. 178–179) with the wool turned inside, and leather leggings. He was accompanied by a reflex bow in a leather case and arrows with wooden, bone, bronze and iron tips, the variety needed for different sorts of prey. There was also a woman 1.57 m (5 ft 2 in) tall, her hair in a net, wearing a woollen gown and white leather boots that covered her ankles.

Among the most spectacularly dressed of the mummies were three women who have been popularly identified as priestesses, although their headgear would mark them out as witches in Western society. The three women, tall and elegant, were crowned with enormous pointed hats. One possessed a double peak (which has prompted some local archaeologists to speculate that she had two husbands!) while another, recently relocated to the Urumchi Museum, had a hat which was too tall to fit in her grave. Her hair was tied up in a hair net and the hat was removed and placed to the right of her chest. The peak was kept erect by sticks placed inside it. The woman was accompanied by a cosmetic kit (comb, etc.) which had been placed in a leather bag (ill. 112).

The preserved torso of another male (his body had been chopped in half by a bulldozer during road-building operations) was found with three curious surgical scars across his chest. The incisions, nearly placed and running horizontally for about 5 cm (2 in), had been sewn up with horse hair sutures but his wounds had not healed. Attached to his coat was a small bag with a brownish substance believed to be realgar (red orpiment) and in another
112. Subash cosmetic kit comprising whitener, rouge and a pointed stone for applying 'mascara'.

113. Head of a man from Subash with surgical incisions sewn up with horsehair sutures.

114. A 1½-year-old baby from Yanghe village in the Tuyuq Gorge (near Subash).
small bag were crushed plant remains, thought to be Ephedra. These may have been two of the medicines he was treating himself with. Why the incisions in the chest region? We have no certain answer but, judging from the autopsies of other mummies, some form of pulmonary disease may have prompted the rather drastic (and apparently unsuccessful) operation.

Related to the people and culture of Subeshi was a little boy of 1½ years, whose body was found in Yanghe village in Pichan (Shanshan) County (ill. 114). He is said to date from around the 3rd century BC.

Imamnusakazim

This site which lies within the region of Khotan and which dates to the period c. AD 420–589 yielded two Buddhist burials of women. The older of the two was about 30–45 years old, of Mongoloid extraction, and had brown hair with a black braid woven in. She wore a white patterned silk shroud. The younger individual was a girl of 10–12 years old who wore a red patterned silk shroud. Both women had silk bands to tie their mouths shut.

Lopnur Region: Grave 7

Grave 7 was located 7.5 km (4.7 miles) southwest of Grave 5. Here Folke Bergman discovered three or four graves, the best preserved of which was numbered 7A. The coffin was half of a hollowed-out tree-trunk which was sealed by two long boards and mounted on four wooden legs. The mumified remains of 'an elderly, stately gentleman with a small white beard, a thin moustache and white hair' had apparently been tipped out by plunderers (Bergman saw the hand of the ubiquitous Ordek in this). The nostrils of the 'high nose' had been stopped by plugs of wool covered with red silk, a far more elaborate affair than the simple woolen stoppers found in the earlier cemeteries. Bergman was impressed with the non-Mongolian features of the deceased and suspected that the mumified remains belonged to an Indian. Silk was employed in the clothing as well as the nose-plugs and there was a particularly elaborate collar which, Bergman conjectured, just might have been produced in a Persian shophouse about the 3rd century AD. Somewhat similar material, including woolen and silk nose-plugs, were found in the other graves and a series of low poles were found at the top of the mound in which the graves had been inserted.

Among the graves excavated by Sven Hedin in the Lopnur region was Grave 35. Attracted by a standing tamarisk pole, Hedin's men dug down to uncover a wooden coffin fashioned from half of a hollowed-out log. Upon removal of the two boards that formed the lid, they found the remains of a young woman, 1.6 m (5 ft 3 in) in height. Her 'turban' and clothes were of silk and she was accompanied by a wooden drinking cup, a wooden food-tray, a sheep's skeleton and twigs of Ephedra. Bergman conjectured that the tomb might date to the first centuries of our era.

115. The Yingpan mummy.

At Yatiq-kol, Bergman numbered as Grave 10 a burial that he found near the southern bank of Qum-darya. Here a coffin, a hollowed-out poplar trunk some 2 m (6 ft 7 in) long, was found dislodged from a yandang, the ridges formed from wind action across the region. The coffin's interior had apparently been lined with thick felt. It contained the mumified body of an old man (1.48 m (4 ft 10 in)). Behind the left ear his grey hair had been twisted into a knot. His teeth were generally in poor shape - the incisors were well worn and the lower molars were missing - although he still had 13 in his upper jaw.

Among the grave goods were the charred bones of a sheep's foreleg that had been covered by a piece of felt to imitate the flesh, and two fish vertebrae. Most unusual was that below his right hip and under his coat was a felt doll, apparently with feminine features painted on and hair in the pubic region, which Bergman interpreted as 'a symbol of a feminine companion'.

The only clue to the date of the burial was that the coat contained silk that measured 60.5 cm (2 ft) wide, 10 cm (4 in) wider than the standard in the Han and immediately post-Han period, thus setting it at the end of the flourishing of the Krorian kingdom.

Yingpan

Finally, we should add here notice of the most recent mummy to be discovered. The Chinese press announced in January 1998 that a new mummy had been uncovered in the Krorian region at Yingpan, a cemetery that has yielded over 30 tombs and is situated to the west of Lopnur. The
remains belonged to a male, aged 25–30 years, who stood some 1.8 m (5 ft 11 in) tall and had been laid out in a wooden casket. He was wrapped in a red woollen robe with yellow embroidered designs and a satin sash was wound around his waist; to the sash was attached a perfume sachet. Grave goods included a necklace, a bow and arrows, a glass cup and a wooden comb. He has been dated to the Han–Jin period, i.e. probably about the 2nd–3rd centuries AD. The most striking feature of the new mummy is to be found on his head. Resting on a satin pillow (we are obviously talking about someone of considerable status, Chinese archaeologists suspect a rich merchant – Sogdian?), the deceased wears a mask over his face. The newspaper reports indicate that the mask is made of wax which can mean hemp, jute, flax, camis, and/or sisal. The wet ‘hemp’ was applied in layers over a wooden mould and allowed to dry; the mould was then removed and the hard cloth mask painted white. The forehead of the mask was adorned with a band of gold foil. This is not the only discovery of a masked individual, because in 1990 Wang Bo recovered from Zaghuinluq a mummified head with a tightly fitting leather mask. The custom of masks, of course, may well derive from China, but we should not forget that one of the characteristics attributed to the population of Kucha was that dancers wore masks.

Pazyryk and Xinjiang

The spectacular remains from East Central Asia are not the only mummies known in Asia. The excavations of the royal tombs at Pazyryk in the Altai Mountains, some 960 km (600 miles) to the north of Turfan, also uncovered a series of mummified remains, attributed variously to Scythians, Yuezhi, Wusun, Xiongnu and the Arimaspian of Arissess, to name but a few candidates. They date from about 300–250 BC and were found preserved in large timber chambers sealed by stone cairns. Unlike the Xinjiang mummies, preparation of the bodies for survival was deliberate, while the means by which it was achieved was accidental. We can partly thank the activities of ancient grave robbers for the preservation of the organic remains in the tombs because they breached the chambers in their lust to recover anything of value. This permitted the tombs to flood with water which, in the high Altai Mountains, froze; the stone cairns served to reflect sunlight and
preserve the ground under them as a primitive ice box of frozen ground. The excavation of the mummies, which required heating water and slowly thawing out the remains, recovered artificially prepared human remains in which evisceration and removal of brains had been practised and the body cavities stuffed with straw before being sewn up with horsehair or tendon sutures.

Like the mummies of the Tarim Basin, hair had been artificially augmented; at Pazyryk a false beard was prepared for one of the mummies of Mongoloid extraction, who apparently required socially what his genetic background was unable to provide. Tattooing was also extremely important and the skin of one of the mummies provided an artistic tableau of mythical and real animals executed in the 'animal style' of the Eurasian steppe.

That there is a possible ethnic relationship between the Pazyryk mummies and those of the Tarim region is a fair inference although we cannot be too precise as to which ethnic groups (probably Iranian) may have been involved. But what of the origins of the mummification found at Pazyryk? The presumption held long ago by Grafton Elliot Smith that mummification was invented solely in Egypt and diffused from there to wherever else we encounter it is hardly tenable on a worldwide scale (for example, Peruvian mummies are the oldest in the world), and connections between ancient Egypt and the Altai Mountains are very difficult to contemplate. As to the origins of artificial mummification, there are (at least) two approaches.

Archaeologists working in the incredibly rich Mervinsk Basin region have suggested that mummification evolved slowly and out of the need to preserve bodies for longer periods as the construction of tombs became more elaborate and required more time. This, they suggest, can be seen in the Tagar culture, a contemporary of the Pazyryk tombs. Here we find the features of the deceased preserved in clay masks. The preparation of the burials required the removal of the soft tissue from the skeleton, the building of an interior mannikin with grass, the sculpting of a facial mask from clay, the fastening of the bones together to form a 'body' to which the head was then attached, and then the painting and dressing of the body. While elaborate, this is a far cry from the result achieved in natural or artificial mummification: it provides an effigy, not a fully preserved body. Those who regard mummification as a one-of-a-kind invention might ponder how these effigies are remarkably similar to the Chinchorro mummies (effigies) of southern Peru and northern Chile that date to c. 6000-2000 BC.
to bury your dead in shallow pits inserted into the desert sands. But as society became increasingly complex and hierarchical, there was a social drive to prepare increasingly more elaborate tombs, large brick chambers (ultimately pyramids) which separated the corpse from the dehydrating effects of sand and dry air. In some cases, we have mummies that were naturally desiccated and wrapped up without exorcism but, in general, if you wanted to retain the integrity of the deceased, artificial techniques were often required and it was these which resulted in our traditional concept of mummification.

While we have no direct evidence for such a transition in Asia, one can at least conjecture that in East Central Asia a similar process evolved. The naturally preserved remains that one would regularly encounter in the Tarim Basin had existed for nearly 2,000 years before we find evidence for deliberate mummification in either Han China or among the Iron Age steppe peoples. We have seen that pastoralists were in continuous contact with the populations of the Tarim Basin and could not have failed to observe the remarkable preservation of the local dead. Indeed, a distinction between some pastoral groups who wandered north of the Tungri Tagh and those resident in the Tarim Basin itself may be unwarranted. In this way, populations already imbued with either an ancestor cult, such as obtained in ancient China, or with a preoccupation with the integrity of the human form in facial features (for instance the inhabitants of the steppelands where clay masks first began in the 3rd millennium BC) may have stimulated others to achieve mummification of their own dead.

The Silence of the Mummies

The forensic scientists have laid out the 'Beauty of Khorain' on their dissecting table. They have weighed her internal organs, examined the integrity of her skin, retrieved nits from her body and tested her with a battery of other scientific techniques. But she still lies there, silent as ever and might just as well have a tag about her big toe, inscribed 'Jane Doe.' She cannot tell us where her ancestors originated, what language she spoke, what her settlement was like, nor who her descendants are. She is no longer articulate, but that does not mean that she has ceased to inform us. She and the other mummies all come to us clothed and, while we may not find a designer label, we may still recover quite a few clues to their identity from their garments.