Reviews and Reports
Re-excavating Cheshmeh Ali

Author Tim Matney introduces one of the celebrated painted ceramic traditions of Southwestern Asia, the Cheshmeh Ali Tradition of north central Iran. He tells two stories. The first is that of the explorations of Erich Schmidt, director of excavations at the archaeological site of Cheshmeh Ali from 1934 to 1935. The second is that of a present-day project to recreate the ancient site of Cheshmeh Ali through the detailed records left by Schmidt and his team. We begin with the second story.

Painted ceramic traditions were widespread across southwestern Asia in the Early Chalcolithic period (roughly 5500 to 5000 B.C.), distributed from the central plateau of modern-day Turkey, across northern Syria, through Iraq and highland Iran to western Turkmenistan and the borders of the Kara Kum Desert. Among these Early Chalcolithic traditions, the exquisite prehistoric painted ceramics of Iran have long held the special attention of archaeologists, art historians, and collectors of antiquities. With their flocks of long-necked birds, prancing goats, and intricate geometric designs in bold black paint (Figs. 1, 2), these elegant vessels speak to contemporary sensibilities across a gap of some two hundred generations.

Despite its aesthetic appeal, the Early Chalcolithic pottery of north central Iran has received little scientific study. Nearly sixty years since the end of the joint University Museum-Boston Museum of Fine Arts expedition to Cheshmeh Ali, the details of excavations at the site remain largely buried in the storerooms and archives of the University of Pennsylvania Museum of Archaeology and Anthropology and the Oriental Institute of the University of Chicago. To remedy this situation, in the fall of 1993 I initiated a reexcavation project at the University Museum, with the goal to publish in full the results of the Cheshmeh Ali excavations. Sifting through correspondence, field notes, object cards and other long-neglected documents, I am, in a sense, re-excavating one of Iran’s most important Early Chalcolithic villages.
LIFE IN THE EARLY CHALCOLITHIC PERIOD

Frank Hole has characterized the Early Chalcolithic period, which he terms the "Early Village Period," as a time of small, widely dispersed agricultural villages. Subsistence in north central Iran was based on a mixed economy including the herding of domesticated goats and the cultivation of barley, as well as the age-old pursuits of hunting wild animals and gathering plants. Remains of undomesticated sheep, cattle, and gazelle have been found at the village of Tepe Sialk, contemporary to and 200 kilometers south of Cheshmeh Ali. The remains of Early Chalcolithic dwellings form an important part of the archaeological record (Fig. 3). Villages consisted of clusters of rectangular mud-brick or packed mud buildings, most containing only a few rooms. The population of these villages rarely exceeded 200 inhabitants. Presumably, widespread nomadic and semi-nomadic elements existed in Early Chalcolithic society but have left few traces for the archaeologist to examine.

As its name implies, the Early Chalcolithic period (chal = copper) witnessed the innovation of copper working in the region of north central Iran. Simple hammering and annealing of small quantities of copper to make objects is attested to at Tepe Sialk. By the early part of the 7th millennium B.C., copper-smiths had developed the technology for smelting and casting. A workshop for casting copper from this period was found at Tepe Ghabristan, northwest of Cheshmeh Ali, complete with smelting tools, molds, and finished copper objects (Majidzadeh 1979).

Other aspects of Early Chalcolithic society remain tantalizing but vague. At the site of Zagheh, 250 kilometers to the northwest of Cheshmeh Ali, excavator Ezat Negahban recovered the remains of a Late Neolithic "shrine" dating to the late 7th or early 6th millennium B.C. This building had elaborate buttressed architecture, internal platforms, and walls painted with geometric designs in red and white and embedded with mountain goat skulls. While no such structures were found at Cheshmeh Ali, it seems plausible that similar shrines may have continued to exist into the Early Chalcolithic period.

The burial customs in the Early Chalcolithic period seem to have varied considerably from one area to the next. In general, burials consisted of single skeletons interred in simple pits, often dug below the floors of houses and courtyards. Infants were buried in ceramic vessels. At Cheshmeh Ali and Tepe Hisar further to the east, the dead were buried with painted pottery vessels, necklaces, armlets, belts and other ornaments made of beads, various stones, and copper. Often a simple copper pin, perhaps worn on the clothing, accompanied the deceased. At both Cheshmeh Ali and Tepe Hisar, with a few exceptions, skeletons lay on their right sides, with legs contracted (Fig. 4). Their orientations suggested to Schmidt, who also excavated at Tepe Hisar, that the bodies were buried facing the sunrise or sunset. At Tepe Sialk to the south, Early Chalcolithic burials customarily were not accompanied by grave goods, but the skeletons showed traces of having been sprinkled with red ochre, a custom which goes back to earlier Neolithic practices, e.g., at Belt Cave on the shores of the Caspian.

THE ARCHAEOLOGICAL SITE OF CHESHMeh ALI

Cheshmeh Ali is set within the southern foothills of the Elburz Mountains which separate the interior deserts of Iran from the last subtropical Caspian shores to the north (Fig. 5). In summer, these foothills present a dry-parched landscape broken only by scattered patches of green around the infrequent springs and occasional streams which run down from the mountains. However, the southern Elburz slopes receive a moderate amount of precipitation and provide, especially at the western end of the range, fertile upland meadows and agricultural land in the valleys. The geography of the region is also important in terms of transportation. Cheshmeh Ali was located along what was to become one of the most celebrated east-west trade routes in antiquity—the Silk Road—which follows for a time the southern flanks of the Elburz Mountains. The imposing acropolis or fortress crowns a rocky spur of some sections of this trade route appears to have started as long ago as 7,000 years, when the small village of Cheshmeh Ali flourished.

Cheshmeh Ali is the name given to a small portion of the more extensive archaeological site of Rayy. The city of Rayy, dating primarily to the Islamic period (A.D. 637-1220), surrounds and overlie the earlier historic and prehistoric deposits of the site, including the small prehistoric mound of Cheshmeh Ali. As Erich Schmidt, the excavator, described the site of Rayy: "The imposing acropolis or fortress crowns a rocky spur of the Elburz Mountains. Smaller mounds and girtle walls of the city defense extend far into the plain, covered with bricks and millions of pot fragments" (1935:41-42). Today, the mound of Cheshmeh Ali is once again inhabited, this time by the occupants of suburban Tehran which has expanded to engulf the ancient site.

EARLY PAINTED CERAMIC TRADITIONS

As noted above, painted ceramic traditions were widespread across ancient southwestern Asia in the Chalcolithic. Perhaps the most well-documented of these was the Halaf tradition of northern Mesopotamia. Named for the site of Tell Halaf in northern Syria, Halaf-style pottery has a wide distribution from the Syrian Euphrates to the Taurus Mountains of Turkey to the
THE POTTERY

The Cheshmeh Ali Prehistoric Project began by focusing on the spectacular pottery housed in the storerooms of the University of Pennsylvania Museum (Fig. 6a, b; see also Fig. 1). The earliest vessels were handmade, although by the end of the Early Chalcolithic, evidence for the use of a slow wheel is found. Typically, the fabric of the vessel is a deep red color, although many lighter shades are also found. The vessels range from eggshell-thin cups to storage vessels with sides two or three centimeters thick and are characterized by a number of handleless forms: small round-bottomed cups with flaring rims, large spherical bowls and pedestalled vases being some of the more common.

The pottery of Cheshmeh Ali, however, is best identified by its painted decoration. The paint itself is dark, either a brownish or, more commonly, black. The majority of sherds are painted with geometric designs parallel bands, vertical stripes, diagonals, wavy lines, chevrons, dots, and dashes. Another frequent motif is a floral or tree pattern with curling branches emanating from a central stalk or trunk (Fig. 7). Vessel interiors are often painted in bands with cross-hatching which closely resembles the work of the basket weaver. We can only assume that many of the forms of these early pots were heavily influenced by traditions of basketry and woodworking which have left few traces in the archaeological record. Although less common than the geometric designs, the painted animals of Cheshmeh Ali form an important part of the ceramic tradition. Goats, ibexes, gazelles, and long-necked water birds parade in horizontal bands across the vessels showing the potter's skill at portraying both naturalistic renderings of the local fauna, as well as highly conventionalized animals, executed with only a minimum of strokes from the artist's brush. Representations of humans are exceedingly rare.

Although we have known about the painted Cheshmeh Ali tradition for many decades, our understanding of these pottery vessels is still limited. Basic questions addressed by the current research are: What are the chronological and spatial distributions of this tradition? Do they form distinct 'types' which can be correlated with kinship or other social groupings? How does this tradition relate to the other Early Chalcolithic traditions mentioned above? The first step toward answering these questions has been to reconstruct the site three-dimensionally. From 1994 to 1996, each object found at Cheshmeh Ali was catalogued, described and drawn, and many were photographed. Detailed plans and daily log books (Fig. 8) note the location of walls, floors, pits, and other architectural features, as well as the location of the thousands of artifacts recovered by Schmidt's team. Early Chalcolithic painted pottery, each piece of information is fed into a computer database, the analysis of which will yield clues vital to understanding the site's spatial relationships.

FUTURE WORK: UNDERSTANDING CHESHEM ALI'S PREHISTORIC SYMBOLS

This brief report has described the background and the work in progress. Therefore, it seems appropriate to give the reader some sense of where the Cheshmeh Ali Prehistoric Project is headed, beyond the mundane (but important) questions of chronology, typology, and interrelations with other sites.

In 1977, anthropologist Martin Wobst published a paper entitled "Stylistic Behavior and Information Exchange" in which he suggests that it might be useful to view material culture, especially styles of artifacts, as a means of transmitting information. The visual information encoded into styles of dress, pottery, houses, and so forth broadcasts messages about our territorial or social boundaries, our ritual contexts and ethnic affiliations, our self-created identities. It helps maintain relationships of exchange, prestige, and power, especially when costly materials or large labor inputs are necessary for production. In short, stylistic data is integral to social cohesion and the smooth flow of negotiations between individuals and groups (Wobst 1977).

Working from this basic premise, a number of scholars have analyzed the decorations on prehistoric painted pottery in an attempt to understand the "meaning" of the information encoded within them. For example, Susan Pollock attempted to correlate variations in painted ceramic styles with changing sociopolitical complexity in the Susiana Plain of Iran during the late 6th and 5th millennia B.C. She found that as society there became more complex, the content and style of the painted pottery changed to reflect this change in complexity. This suggests that the painted pottery was used as a means of communicating the status and power of the individuals who controlled the production of the vessels.

FIG. 7. MORE DESIGN MOTIFS. Plant and basketry patterns are common elements among the Early Chalcolithic painted pottery designs at Cheshmeh Ali. Basketry designs frequently adorn both the interior and exterior of pottery vessels.

FIG. 8. PAGE OF SCHMIDT'S DAILY LOG BOOK. Schmidt recorded a daily log of events under excavation, the principal finds of the day, unusual occurrences, the movements of workers and his team, as well as the arrival of important visitors. As one of the few narrative accounts of the excavation, the log book is a key piece of information for understanding the progress of the excavation.
plex and stratified, a class of elite or prestige goods emerged which demonstrated a "readiness of stylistic embellishment." As Pollock puts it, "...the florescence of painted goblets in Susa A is related to the presence of a distinctly stratified society...whose elite could support the costly production of fancy pottery which symbolically reinforced their high-status positions through the stylistic messages it conveyed" (1983:380).

In a similar vein, one goal of continuing the present research is to assess the meaning of the Early Chalcolithic motifs found on the pottery from Cheshmeh Ali. This work has already been started by examining and cataloguing all the design elements found on the pottery, noting their location on the vessels, their variants, and the combinations in which they occur. This information is being coded and entered into a computerized relational database. Additionally, the stylistic information regarding the vessels is tied to a database containing a wealth of information on the spatial location of every object, within rooms, on floors, in ancient pits or piles of debris. The spatial patterning of the objects also provides us with an understanding of where an object was used, what it might have been used for, what meaning it might have carried. Which artifacts were used in burials rituals? Which were used exclusively by men or women? What was the social significance (if any) of the elaborate painted motifs? Were they family-specific, individual to each potter, or perhaps related to another social grouping? To answer these questions, we must turn to the patterns found within the computer database; these patterns should provide some insight into the information encoded on the beautiful painted vessels of Cheshmeh Ali.

And so we turn to new technologies and new methodologies to look at very old data, much as Schmidt had done when he turned to the cutting edge of technology—aerial photography, moving, color and stereoscopic pictures—and to the young methodology of detailed stratigraphic excavation. Where Schmidt laboriously created cross-indexed systems of notecards and file folders, the modern researcher can access thousands of pieces of information in a matter of seconds through a computer database. Not only has such development eased the burden of working through the mountains of information generated by archaeological excavation, but they have also opened up entirely new avenues of research and allow us to ask questions which Schmidt working within the limits of his era could never have addressed.

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Notes from the Field, 1934–1936

Perhaps the most significant change in archaeological fieldwork over the past sixty years has been the introduction of new technology. Most modern excavations employ teams of specialists—palaeobotanists, palynologists, geomorphologists to name a few—as well as a variety of scientific instruments. Laser rheodolites, laptop computers, and even robots have largely replaced the traditional plumb bobs, notecards, and plane tables in the field. Erich Schmidt's work at Cheshmeh Ali was highly innovative, pushing the limits of the technology of the 1930s, especially in the area of photography. Schmidt employed aerial photography, color photographs, even stereoscopic photographs as an aid in recording the details of his work. In the following pages, the story of his excavations is told mainly through his evocative photographs which provide a glimpse into the early days of American archaeology in Iran.

—T.M.

Erich Schmidt's work at Cheshmeh Ali was highly innovative, pushing the limits of the technology of the 1930s.

FIG. 9. MAN LEADING CAMELS ACROSS THE PLAIN OF RAYY, AUGUST 1934. Clinging to the southern slopes of the Elburz Mountains, the fertile band separating high mountains and inhospitable desert has from earliest times been a corridor between east and west. Here a man leading his camels crosses the Rayy plain near Safiyah. In the Early Chalcolithic, before the domestication of the camel and other beasts of burden, transport would have been limited to what one could carry, drag, or float along rivers.

Photograph courtesy of the Oriental Institute, University of Chicago, Rayy Expedition field neg. RE-136b.
Fig. 10. Start of excavations at Cheshmeh Ali. Excavations began on the south slope of the Chehsheh Ali mound in 1934. Here two 10 m by 10 m trenches have been laid out and the topsoil partially removed. Excavation squares measuring 10 m on each side were marked off using heavy white rope and provided the archaeologists with strict spatial controls. Eventually crews of over 100 men would work at the site. In the background is the garden of Saifayyah.

Photograph courtesy of the Oriental Institute, University of Chicago. Rayy Expedition field neg. RE-45b

Fig. 11. Arrival of the Friend of Iran, August 1935. On February 4, 1935, Schmidt was named director of the Persepolis expedition in Fars province of southwestern Iran while still working at Rayy in the north. He expended great effort to obtain an airplane in order to shuttle back and forth between the two projects. Schmidt encountered numerous delays in securing permission from the Iranian authorities to import the airplane, dubbed the Friend of Iran, eventually enlisting the aid of the prime minister to win a favorable decision. Using the Friend of Iran, Schmidt undertook an intensive program of aerial survey in Iran which he published in 1940 as Flights over Ancient Cities of Iran. This photograph was taken at the Doshari Tepe aerodrome in Tehran on August 7, 1935. As part of his agreement with the Iranian government, the plane was left in the country following the conclusion of Schmidt's work.

Photograph courtesy of the Oriental Institute, University of Chicago. Rayy Expedition field neg. RE-821;

Fig. 12. Aerial view of Rayy. This aerial view of the citadel was published by Schmidt in Flights over Ancient Cities of Iran. As Schmidt described the photograph, "The main part of the citadel is in the left center. Below the fortress a section of the enclosure of the ancient governmental quarter rises above the Rayy plain, while the mountain Sar-i-Tschaful fills the background" (May 15, 1936).

Schmidt 1940: Pl. 11

Fig. 13. Mary-Helen Warden Schmidt mending Islamic fabrics. This photograph shows Mary-Helen Warden Schmidt, the director's wife, in August of 1936 repairing fabric found in the Islamic tomb-tower at Naqshar Khanes. She was an integral part of the expedition and, among other tasks, was the founder of the "aeronautics division" of the project and, at times, was the camp doctor, pharmacist, and superintendant (Schmidt 1940).

Photograph courtesy of the Oriental Institute, University of Chicago. Rayy Expedition field neg. RE-628.
FIG. 14. GEORGE BRAINERD CLEANING COINS. All early archaeological expeditions to southwestern Asia relied on a corps of specialists to clean, register, draw, and restore the objects recovered via excavation. Here George Brainerd, one of Schmidt's assistants, can be seen cleaning coins by use of a hand-cranked polisher (March, 1934). Other "primitive" conservation supplies included acids to dissolve the encrustation on metal objects. The coins, mostly dating to the Islamic occupation of Rayy, have been published by George Miles in his 1958 volume The Numismatic History of Rayy (New York: The American Numismatic Society).

Photograph courtesy of the Oriental Institute, University of Chicago, Rayy Expedition field neg. RE-18

FIG. 15. MENDING A PREHISTORIC POT OF HISAR IA TYPE. The primary class of artifact recovered from Cheshmeh Ali was pottery. Dozens of complete vessels and hundreds of thousands of sherds were recovered during the course of three years of work. Many of these are on view in the permanent collections of the University of Pennsylvania Museum and the Oriental Institute of the University of Chicago. In this photograph a large black-on-red prehistoric pot is being mended and restored (July, 1934). Note the tripod holding a small double boiler in the foreground. It was probably used to melt shellac or paraffin. Paraffin was employed in lifting delicate objects, like mosaics, out of the ground.

Photograph courtesy of the Oriental Institute, University of Chicago, Rayy Expedition field neg. RE-118

FIG. 16. JAMES GAUL IN WORKROOM WITH TYPE-WRITER. Working in what was called the Luristan Annex of the "Museum" at the Rayy camp, James Gaul is surrounded by an impressive collection of ceramic vessels (July 1936). In the 1930s, pottery was routinely photographed and drawn in black and white; recording color was a serious problem for the field archaeologist. While Schmidt employed some of the earliest color film available, it was expensive and unreliable. He relied instead upon an artist, Ivan Gerasimoff, and an aquarellist (water colorist), J. A. Bornholdt, as part of his crew. The archives of the Oriental Institute holds several watercolor renderings of the ceramic vessels.

Photograph courtesy of the Oriental Institute, University of Chicago, Rayy Expedition field neg. RE-688

FIG. 17. VESSELS ON DISPLAY AT FIELD HOUSE. Schmidt often entertained visitors and had a small museum set up in the dig house at Rayy. Here we see a collection of pottery dated to the Parthian period from Cheshmeh Ali. Note that the objects were accompanied by photographic prints of the excavation in progress (October, 1934). Schmidt has a reputation for having been very regimented about the use of photographs as a record of the excavation and his collection of negatives and prints was kept in impeccable order. The Archives of the Oriental Institute presently houses eight large photograph albums which contain all 1,200 or so images taken by Schmidt, arranged in numerical order. As a pioneer in the area of field photography, Schmidt experimented with stereoscopic pictures ("anaglyphs") which showed features in deep relief when viewed through special red and green glasses.

Photograph courtesy of the Oriental Institute, University of Chicago, Rayy Expedition field neg. RE-217
Routes Through the Eastern Desert of Egypt

Steven E. Sidebotham and Ronald E. Zitterkopf

Not since the Ptolemaic-Roman-Byzantine era (late 4th century B.C. to 7th century A.D.) have the Eastern Desert and Red Sea coast of Egypt witnessed the activity now taking place, as tourism and settlements for Egypt's burgeoning population encroach into once sparsely settled areas. During the Ptolemaic, Roman, and Byzantine periods, a healthy trade between the Mediterranean region, South Arabia, East Africa, and South Asia traversed the Eastern Desert and the Red Sea (Fig. 1). These trade routes fell into disuse with the decline of the Roman Empire and virtually disappeared with the discovery of the sea route around the Horn of Africa in the late 15th century. The opening of the Suez Canal in 1869 somewhat revived commerce in this area, but for most of the period between the 7th and the 19th century, the Eastern Desert lay nearly abandoned. Evidence of scores of ancient sites remained unrecorded until now.

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Fig. 1 Patterns of trade through the port of Berenike.

Fig. 18. Prehistoric Levels at Cheshmeh Ali. This photograph shows excavations in the central part of the excavation taken from the west. In the left background is a modern cement factory which was built to the north of the citadel of Rayy. On the right is a sewer, an apparatus still seen on most modern excavations in the Near East. Mounting on a large wooden tripod, the sewer is used to retrieve small objects, sherds, bones and other material left in the soil after it has been removed from the trenches. The white ropes marking the limits of each square criss-cross the excavation. Note the archaeologist perched atop the ancient walls taking notes. A rocky spur of the Elburz Mountains forms an imposing backdrop (September 1955).

Photograph courtesy of the Oriental Institute, University of Chicago Raya Excavation field neg. RE-465.