the Ninevite 5 period was contemporary with Early Dynastic I.\textsuperscript{13} It may have begun in the Jemdet Nasr period and have ended before the end of Early Dynastic III.

Table 1 summarizes the chronological conclusions of this study. The correlations with the Diyala and Babylonian sequences are tentative and may need to be changed as the southern sequences are refined and

\textsuperscript{13} I am grateful to Edith Porada and to Holly Pittman for information on the dating of seals and seal impressions in the “Piedmont Jemdet Nasr” or “Glazed Steatite” style.


There will be a conference at Yale University, 15–19 December 1988, entitled “The Origins of North Mesopotamian Civilization: Ninevite 5 Chronology, Economy, Society,” which will review the question of the chronology of Ninevite 5.

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The Northern “Frontier” of the Ancient Near East: Transcaucasia and Central Asia Compared*  

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This paper briefly reviews the material-culture record assembled from two areas: Transcaucasia and Soviet Central Asia (or, more broadly, western Turkestan), and then attempts to contrast and compare the processes of development adumbrated for these two areas, particularly as these processes impinge upon the history of the ancient Near East. Given considerations of space, vast sequences of archaeological materials will be presented selectively, if not impressionistically, and certain recalcitrant interpretative problems, such as unresolved chronological issues, will not be addressed.

* My understanding of the prehistory of Transcaucasia and Soviet Central Asia is largely the product of several extended research trips to the Soviet Union, most recently a five-month visit during 1986 in which I tried to familiarize myself with current work and discoveries in the Caucasus. Needless to say, I am extremely grateful to have had these opportunities and wish to express my warmest appreciation to my Soviet hosts, particularly to Dr. R.M. Munchaev, the Assistant Director of the Institute of Archaeology, Academy of Sciences in Moscow, who has supported my efforts from the beginning.

An overview of recent archaeological discoveries in the Caucasus was first presented at the Columbia University Seminar on the Archaeology of the Eastern Mediterranean, Eastern Europe, and the Near East in April 1987. A version of this paper was delivered at the meetings of the Archaeological Institute of America in New York, December 1987 (\textit{AJA} 92 [1988] 238–39). The notes in this paper only list articles and books accessible in the major Western languages; for recent Soviet publications on the Caucasus, see P.L. Kohl, “The Transcaucasian Periphery in the Bronze Age: A Preliminary Formulation,” in E.M. Schortman and P.A. Urban eds., \textit{Resource, Power and Interregional Interaction}, in press. I also wish to acknowledge the help of Prof. Edith Porada in the preparation of this article for publication.
The two areas of the Soviet Union to be discussed can be distinguished in terms of their natural environmental settings. Transcaucasia is the area immediately south of the main Caucasus range or mountain chain that stretches uninterruptedly for ca. 1200 km northwest to southeast from the Black and Azov Seas in the west to the Caspian Sea in the east. It is a mountainous region marked by considerable environmental diversity, consisting of separate intermontane valleys, high upland plateaus, the lush subtropical Colchidean depression in western Georgia, dry steppes bordering the Kura-Araxes lowlands in eastern Azerbaijan, and a fairly broad coastal Caspian plain. The climate varies according to altitude and the prevailing wind patterns are shaped by the rugged topography with natural precipitation generally decreasing west to east. Besides the small rivers of western Georgia that flow west into the Black Sea, the major rivers of Transcaucasia consist of the Kura (1364 km) and Araxes (1072 km) and their tributaries which flow west to east, ultimately joining in their lower courses before entering the Caspian.

Such varied natural conditions obviously were important determinants of cultural development with different subsistence systems appearing in different environmental zones. Certain highland areas, for example, were most suitable as seasonal pastures. Dry farming could be practiced along the middle course of the Kura river and in much of what is today eastern Georgia, though its yield could have been and probably was augmented by relatively small-scale water diversion practices. Farther east in Azerbaijan or particularly in the fertile Ararat valley (ca. 120 km long and ca. 40 km wide) along the middle course of the Araxes river in southernmost Armenia and Nakhichevan more intensive irrigation systems were established presumably at least by the Early Bronze period.

The northern boundary of Transcaucasia is well defined by the main ridge of the Great Caucasus range; while the major passes of the Great Caucasus are not very forbidding (all less than 3000 masl) and open much of the year, they are and were easily defended through the strategic placement of stone structures at narrow defiles along the routes. The mountains formed not only a physiographic but also a cultural divide, separating ultimately the cultures developing on the South Russian steppes from those evolving farther south in more or less continuous contact with the cultures and high civilizations of the ancient Near East. On the other hand, there is no well-defined southern boundary to Transcaucasia, the modern political border representing little more than that, particularly as the Armenian highlands stretch imperceptibly across the Ararat valley into what is today eastern Turkey. Both the Kura and Araxes rivers rise in eastern Turkey; the Araxes’ headwaters are in the vicinity of Erzerum or immediately due north and east of those of the upper Euphrates. That is, when one considers the cultural ecology of Transcaucasia, its connection to the greater Mesopotamian world is obvious and direct, a point we shall return to in presenting the interregional relations suggested by the archaeological evidence.

Moving eastward, western Turkestan comprises the vast area of interior drainage formed by the streams draining the Kopet Dagh and northern Hindu Kush mountains and by the Atrek, Tedjen, Murghab, Amu Darya, Zeravshan, and Syr Darya rivers, and their tributaries. Today this area is divided among three nation-states: Iran; Afghanistan; and the republics of Turkmenistan, Uzbekistan, Tadjikistan, and part of Kirghizia in the Soviet Union. Most of the archaeological materials date have been recovered in the Soviet Union, and, thus, of necessity, our discussion will focus on Soviet Central Asia, particularly southern Turkmenistan where most of the detailed prehistoric sequence has been established. The land itself contains largely uninhabited deserts (the Kara Kum and Kyzyl Kum, in particular), rugged mountain ranges, lowland alluvial plains, watered piedmont zones, and intermontane valleys. The archaeological record, however, is best established for specific piedmont areas, particularly the northern foothills of the Kopet Dagh which merge quickly into the southern Kara Kum, and now also for the lowland plains of Margiana or the deltaic fan once watered by the lower course of the Murghab and what classically was known as Bactria, or today’s southern Uzbekistan and northwestern Afghanistan. Southern Central Asia is a landlocked basin with a sharply continental climate and is very arid, particularly throughout these lowlying plains that were densely occupied during the Bronze Age. Thus, the development of a form of irrigation agriculture, typically along the terminal ends of water courses disappearing into the Central Asian sands with their settlements clustered together in separate oases, like grapes bunched together at the end of grapevines, was an essential requirement for inhabiting these zones.

Although not as strikingly as Transcaucasia, the northern boundary of this area is reasonably well defined by the Kara and Kyzyl Kum deserts and ultimately the steppes of Kazakhstan, while its southern border is much less clear as the region imperceptibly merges with the Iranian plateau and other landlocked riverine systems, such as the Hilmand of Afghan and
Iranian Seistan. General similarities in environments and the corresponding cultural adaptations to them have occasioned the use of the later cultural/geographic term Turan to encompass the Bronze Age societies that developed throughout an even broader area stretching from Baluchistan in the south to the Kyzyl Kum in the north. Whatever its shortcomings conceptually, reference to a prehistoric Turan does underscore the interregional connections stretching north to south from Central Asia through the Indo-Iranian borderlands to the Indus valley itself and also reflects the later seasonal movements of peoples from Baluchistan up to Khorassan or, alternatively, as known historically, of peoples moving south from Central Asia toward the subcontinent. In other words, in terms of its cultural ecology, western Turkestan’s interregional connections are not so much with the Mesopotamian world as with eastern Iran, the Indo-Iranian borderlands, and South Asia—a fact also reflected in the material-culture record summarized below.

Finally, before turning to the archaeological evidence, it is important to note that the Caspian Sea functioned as an effective barrier separating developments in Transcaucasia from those in Central Asia. An initial striking and superficially correct impression of the material culture remains from the two areas is that they are highly distinctive with few obvious parallels. The connections between the areas must have been either very indirect through the more sparsely inhabited steppes and desertic regions north of the Caspian or, more certainly, across northern Iran, particularly Gilan and Mazanderan provinces. Unfortunately, the archaeological record from the latter area is poorly known and largely from illicit, non-scientific excavations and, for obvious reasons, not likely to be documented in the immediate future. Thus, it is for all practical purposes at the moment impossible to establish direct connections between Transcaucasia and Central Asia and, correspondingly, it is justified to discuss these records separately—although this procedure, in fact, represents only a necessary adjustment to an incomplete data base.

The beginnings of food production in Transcaucasia, which date back to the Early Holocene, are not yet well documented. Part of the difficulty is that the apparently earliest aceramic lithic assemblages come from deflated and largely destroyed sites in western Georgia, a subtropical region not conducive to decent archaeological preservation. Trace-wear analysis of obsidian blades from the site of Anaseuli 1 has established that they were used as reaping tools, presumably for the harvesting of wild grasses, a practice that may suggest an early and possibly largely independent focus for early cereal domestication. Subsequently, crude handmade ceramics appear together in western Georgia with typologically more advanced lithics, primarily made of local flint—a fact possibly suggesting the decline of the earlier, presumably pan-Transcaucasian obsidian exchange network. With the exception of a few recently discovered aceramic sites, such as Dmanisi, with obsidian tools from Kvemo Kartli (southeastern Georgia), the first well-established archaeological horizon, the Shulaveri-Shomu culture of Kvemo Kartli and western Azerbaijan, relates to the Late Neolithic or Early Aeneolithic period and is well dated by a series of consistent corrected radiocarbon determinations from the mid-sixth through the first few centuries of the fifth millennium B.C. Shulaveri-Shomu sites1 contain a distinctive material culture assemblage with handmade pottery, clay figurines, and circular superimposed domestic structures of mudbrick and pisé with relatively thick cultural deposits; for example, at Khramis Didi Gora, 10 building levels were uncovered in a cultural deposit of ca. 6 m. To my knowledge, the Shulaveri-Shomu complex has not yet been documented outside Transcaucasia, and it seems to represent a local phenomenon, centered in eastern Georgia and western Azerbaijan.

Subsequently during the fifth millennium B.C. there seems to have developed a series of regional cultures distributed across Transcaucasia but particularly well documented in the south in Nakhchivan and in eastern Azerbaijan along tributaries flowing down from the Little Caucasus ranges to the Araxes or Kura rivers. It is during this period that one finds the first unequivocal evidence for relations to the greater Mesopotamian world and possibly as well across the Caucasus to the north. Isolated, but unmistakably Halafian, sherds2 have been found—first at Kyul Tepe I in Nakhchivan. Ubaid materials similar to those uncovered by the Soviet mission to northern Iraq at Yarim Tepe III have been found at Leila-depe in the Agdam region of eastern Azerbaijan, excavated and identified by I. Narimanov.3 Another site in east-

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3 For the Ubaid culture, see J. Oates, “Ubaid Mesopota-
ern Azerbaijan, Alikemek-tepesi, contains painted pottery analogous to wares known from Iranian Azerbaijan, as well as a very impressive assemblage of bone tools: most interestingly, hundreds of equid scapulae were found in one tool-production area.

These localized Late Aeneolithic cultures are followed by the appearance of what is known in the Soviet literature as the Kura-Araxes or in the Western literature, after Burney, the Transcaucasian culture. Space prevents us from reviewing the wealth of archaeological data documenting this culture in any detail; only selected points can be made. First, the question of continuity of Kura-Araxes remains with the earlier materials summarized above is not clear and debated among Soviet archaeologists themselves; the weight of the evidence seems to favor a break in the record—that is, an absence of continuity—for most, though probably not all, areas, and most investigators see the Kura-Araxes culture as originally developing in its earliest phase in Shida and Kvemo Kartli (i.e., eastern Georgia). Second, it is noteworthy that while one today can speak of Halaf and Ubaid materials in Transcaucasia, as yet nothing has been found that can be related to the Uruk period in Mesopotamia, despite the presence of Uruk-related materials from the neighboring region of eastern Turkey, as at Arslantepe. Although it cannot yet be demonstrated, it is tempting to suggest causal relationship in the coalescence of the Kura-Araxes culture, which soon unites in some fashion nearly all of Transcaucasia and even Daghestan to the north, with the Uruk presence immediately to the south, to see the former phenomenon as a response to the latter. Through its defined subphases, Kura-Araxes materials are found throughout Transcaucasia (save for western Georgia) and date at least from the middle of the fourth millennium B.C. possibly into the second half of the third millennium B.C. The settlement pattern is quite dense; literally, hundreds of Kura-Araxes sites have been documented, but the nature of the settlement hierarchy remains unclear, most sites being quite small—a maximum of 3–5 ha in extent—and at least in Georgia being quite thin, rarely exceeding ca. 2 m of cultural deposit. Arsenic bronze metallurgy is attested, and it is claimed that in the Ararat valley some larger Kura-Araxes sites were fortified. Connections to the south consist of Kura-Araxes materials and presumably settlements and peoples found in western Iran and eastern Anatolia; the movement is north to south, while nothing bespeaks the movement of materials or peoples in the opposite direction.

Sometime during the second half of the third millennium B.C., there is a dramatic change in settlement data, suggesting the abandonment of most sites. The archaeological record for the Late Early Bronze and Middle Bronze periods is known primarily, though not exclusively, from mortuary data, particularly from the excavation of large, richly adorned kurgans. Reasons for the shift in the location and nature of sites are not completely clear, with explanations ranging from environmental changes to developments of new economic subsistence practices, such as possibly a growing reliance on sheep/goat pastoralism. Materials found in the burials record the increased importance and utilization of metal weapons and equipment, including now tin-bronzes, as well as new means of transportation; specifically, two- and four-wheeled wagons, pulled by bovids and—in the latter part of the second millennium—by horses, have been uncovered in these kurgans along with evidence (bits, cheek-pieces, etc.) suggesting increasing mastery of horses and mounted horsemanship. Jewelry, precious stones, and metals, as are well known from the Middle Bronze Trialeti kurgans, also show a qualitative increase during the period immediately subsequent to the final phase of the Kura-Araxes culture. Judging by differences in the grave assemblages, it is clear that the society is not undifferentiated but ranked, if not stratified, into a well-defined social hierarchy. To some extent, this evidence now can be better related to data provided by kurgans in the northern Caucasus, and it is likely that there were movements of peoples and probably diffusions of technologies across the Great Caucasus in a dominantly north to south direction. Also, stylistic comparison of metals, particularly weapons, suggests contact and trade with areas to the south, particularly Anatolia, as well as to the Aegean world, possibly suggesting a still largely undocumented second-millennium B.C. trade across the Black Sea to western Georgia or classical Colchis.

Burial data, subdivided into chronological phases primarily in terms of accompanying ceramics and metal weapon types, continue to be the major source of archaeological information until roughly the middle of the second millennium B.C. During the Late Bronze period, however, settlements, often fortified with mas-

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*mia Reconsidered,* in C.T. Young et al. (supra n. 2) 251–82.

4 Burney and Lang (supra n. 1) 43ff. For the recent most complete listing of Kura-Araxes sites, see A.G. Sagona, *The Caucasus Region in the Early Bronze Age (BAR International Series 214, Oxford 1984).*

sive stone walls and located in easily defensible spots, such as on the top of steep hills or on buttes surrounded on two or three sides by deep ravines, reappear in great numbers. Kurgans containing rich burials were constructed throughout this period, but no archaeologists also find large cemetery fields, often in association with settlements, such as at Treligorebi near the western outskirts of Tbilisi or at Shamiram and Metsamor in Armenia. Caches of literally thousands of metal weapons and ornaments have been discovered at sites, such as Mele Gele I and II and Meliaani in Kakhetia (eastern Georgia), in what clearly must be interpreted as ritual contexts. Data from the settlement and cemetery components of sites such as Metsamor on the Ararat plain west of Yerevan leave no doubt that there existed a Late Bronze/Early Iron state formation in Transcaucasia preceding that of the later Urtaneans. Thus, for example, the massive citadel at Metsamor preshadows in its size and construction technique citadels of the Urtanian kingdom, and one large burial from the site, which yielded a stone weight in the shape of a frog with a cuneiform inscription to the late 16th-century Kassite ruler, "1 shekel—Ulam Buriash, son of Burna Buriash," is said to have contained two principal burials, surrounded by 50 accompanying human burials, mainly women (i.e., evidence for human sacrifice), and 19 horses, bulls, sheep, and dogs. Such a state or states may indeed be viewed as a secondary formation in response to growing Near Eastern influence, if not attempted expansion, from the south, but, at least as reconstructed archaeologically, what formed were indigenously created and independent political entities.

By the second half of the second millennium B.C. a pattern of settlement had been established that would continue to characterize the region not only throughout antiquity, but also, if one discounts for the purpose of argument certain changes in the material record associated with the advent of Christianity, for the historic period until the advent of modern times. Hilltop fortress sites, for example, which first appear in large numbers during the Late Bronze period, continue to have been constructed on the basis of their surface remains through Mediaeval times. Transcaucasia always attracted pastoral nomadic groups coming from the north or east or imperial states expanding from their bases in Iran or Asia Minor to the south. Consequently, indigenous peoples—and over time ethnic diversity undoubtedly increased continuously—lived in areas and settlements that could be easily defended. Martial skills were honored, and peoples pursued mixed subsistence strategies that were already in place by the late prehistoric period.

Our review of the Central Asian materials must perforce be even more schematic. Essentially, Soviet archaeologists have established a continuous evolutionary sequence for southern Turkmenistan in particular which stretches from the so-called Djeitun Neolithic period through the Iron Age into historic times. The sequence begins, in other words, almost at the same time as the first well-established horizon, the Shulaveri-Shomou cultural complex, appears in Transcaucasia. One cannot draw the connections between these areas given the absence of information from northern Iran, but it is not unlikely that both areas constitute secondary centers of domestication, reflecting the diffusion of food production technologies that developed earlier to the south in the Zagros and Syro-Palestinian areas. The Central Asian sequence, the chronological phases of which after the Djeitun period are named after the type site of Namazga-depe (NMG I-VI), can be distinguished from the Transcaucasian sequence in that some sites, like Namazga-depe and Altyn-depe, are continuously occupied from at least the fifth through most of the third millennium B.C., and that there is an earlier settlement hierarchy with cities up to 50 ha in extent appearing perhaps as early as the beginnings of the third millennium or during the Early Bronze (NMG IV) period. We also know today that by the fourth millennium B.C. agricultural settlements, clearly related to those of southern Turkmenistan, with an advanced copper metallurgical technology, stretched farther to the east at least to the upper Zaravshan valley east of Samarkand, as is now documented at the site of Sarazm in Tadjikistan.

What is intriguing, however, and important for comparison with Transcaucasia is that the long-lived settlements in southern Turkmenistan seem to have been largely abandoned by the closing centuries of the third millennium B.C., roughly the same time period when the Kura-Araxes settlements were abandoned, when the Transcaucasian archaeological record shifts to materials coming almost exclusively from kurgans. In Central Asia a different pattern develops. New alluvial plains watered by large rivers, such as the Murghab, which were previously exploited almost exclusively by non-food producing peoples, are suddenly

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settled on a massive scale. Permanently occupied settlements, often apparently planned and fortified, that show a clear settlement hierarchy of urban and non-urban sites, appear in clusters or oases of settlements at the terminal ends of these rivers. Shallow, easily uncovered cemeteries accompanied these settlements, and those in northwestern Afghanistan are, of course, the sources of the so-called Bactrian bronzes that have flooded the art market in recent years.

Reconstruction is difficult, given the lack of provenience and associations of most of these materials, but comparison and contrast with the Transcaucasian materials are instructive. While the objects found in the two areas are clearly culturally distinctive, the qualitative advance in metallurgical technology appears to have occurred at roughly the same time. A similar emphasis on advances in weaponry is apparent, though again the types found are distinctive; also the use of specific jewelry techniques and of precious metals, such as silver and gold, for vessels is documented in both areas for sites—cemeteries accompanying settlements in Central Asia and kurgans either isolated or in fields of burials without accompanying settlements in Transcaucasia—dating to the end of the third and beginning of the second millennium B.C. The Transcaucasian materials more unambiguously document social differentiation and also to a considerably greater degree emphasize horsemanship and the use of drawn wheeled vehicles.

Parallels to the Bactria-Margiana phenomenon beginning at the end of the third and into the first half of the second millennium B.C. are not to the Mesopotamian world, but to the south and southeast, to prehistoric “Turan” and to the borders of the Indus valley, particularly now to the important series of sites excavated on the Kachi plain by Jean-Françoise Jarrige: Mehrghar, Sibri, and Nowsharo. Contra Jarrige’s current interpretation, I still feel these parallels, which document a profound shift in cultural orientation throughout eastern Iran and the Indo-Iranian borderlands, are best viewed as the result of a movement of peoples as well as materials, undoubtedly more gradual than sudden and planned, north to south. This movement permanently affected the cultural geography of the region and set the stage for important developments during the Iron Age and later historic periods.

One final comparison should be drawn to Transcaucasia, this time following the interpretation of Jarrige and his coworkers. At the early second millennium site of Pirak, there is both unequivocal evidence for mounted horsemanship and a shift in the agricultural economy with the introduction of new cultigens, such as sorgum and millets, probably coming from Africa via the Arabian peninsula, and rice. This evidence supports the use of the monsoonal rains and double cropping, summer as well as winter grains being harvested. Thus, by the early second millennium B.C. an economic pattern was established which defined village India until the arrival of the British and the advent of the modern era. A second plant and animal “revolution” had been completed by the first centuries of the second millennium B.C. which provided new means of transportation, new sources of energy for draft purposes, and new sources of food. Effects of this second revolution reverberated throughout the ancient Near East, including both its central and eastern northern frontiers. Different patterns of settlement and subsistence practices were established in Transcaucasia and in Central Asia, but in both areas they proved remarkably durable.

Neither Transcaucasia nor Central Asia were dependent politically upon the higher literate civilizations flourishing farther to the south until the Iron Age and advent ultimately of the Achaemenids. During the Bronze Age, it was more often the southern urban civilized areas that became dependent politically upon less advanced neighbors or relied upon them as sources for valued materials. The barbarian “peripheries” or northern frontiers of Transcaucasia and Central Asia, like their Aegean counterpart far to the west, did not palely reflect the light of civilization emanating from the ancient Near East; rather, they stimulated the latter “civilized” area and profoundly affected its course of development.

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7 Illustrations of some of this material are included in V.I. Sarianidze, *Die Kunst des alten Afghanistan* (Leipzig 1986).