ISSN 0285-4406

ラーフィダーン

第 VIII 巻　　1987

国士舘大学イラク古代文化研究所

ISSN 0285-4406

Published by the Institute for Cultural Studies of Ancient Iraq
Kokushikan University, 844 Hirobakama, Machida, Tōkyō, Japan.

Printed in Japan
by Daigaku Letterpress Co. Ltd., Hiroshima

ラーフィダーン
AL-RĀFIDĀN

第 VIII 巻　　1987

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URARTU AND THE BLACK SEA COLONIES : AN ECONOMIC PERSPECTIVE

By David J. G. Slattery*

要　　旨

ウラルトゥと黒海沿岸のギリシア植民都市：経済的視点より

スラッタリー，D. J. G.

紀元前1千年紀前半において，ヴァン湖周辺地域に勢力をふるっていたウラルトゥ帝国と，黒海の南岸に沿って散在していたギリシアの植民都市とが，それらの中間に位置し当時多種の金属鉱物を産出する地域として言及されているDiauehiとの間に互いに利害関係をもっていたことは，ウラルトゥ及びアッシリア，ギリシア，ローマなどの文献史料の比較研究からよく知られている。

従来，ウラルトゥとそれらギリシアの植民都市との間に，Diauehi地域を通過し直接的に，あるいはその地域を仲介して間接的に，交易が行われたか否かの問題について，地中海地域でウラルトゥからの搬入品が発見されている事実に基づき想定されるウラルトゥと地中海地域との交易という大きな視野の中で，主に政治的視点からの探求と数多くの論議がなされてきたが，未だどちらの見解においても明確な証拠が提示されておらず，従ってその結論は得られるにいたっていない。

筆者は，Diauehi地域の地勢を考慮した上で，ウラルトゥとそれらギリシアの植民都市が，その地域内にそれぞれ異なった金属鉱物の市場を有していたという考えをもつ。このことからDiauehi地域がそれら両者間の交易の仲介をはかっていたという説に対して，否定的な立場にたつ。また，交易が仲介なしに直接行われていたとする説に対しても，反対の見解をもっている。

本稿の主眼は，この問題に関する考古資料と歴史史料を，今までほとんど探求されたことがない経済的視点より再考察し，新しい問題を提起すると共に，筆者の見解をより一層明らかにし，更にその交易の不可能性を論証することにある。

The question of trade between the Greek colonies along the southern shore of the Black Sea and the empire of Urartu poses one of the enigmas of historical research dealing with north-eastern Anatolia in the Ist millennium B.C. The relationship between these two areas first came to light with the discovery of "so-called" Urartian bronze objects in the Aegean and Italy [Minns, 1913: passim; Pareti, 1943: passim]. Barnett pointed out that these items could have been traded from Urartu to the Black Sea and then shipped to their final destinations [Barnett, 1984: pp. 314–21]. Others have suggested that alternative routes, either across Anatolia, or south-westward to Al Mina, are more probable [Winfield, 1977: pp. 151–66; Birmingham, 1961: pp. 185–95]. While they may be correct, scholars have failed to realize that economic factors resulted in the trade routes from Urartu to the Black Sea not being used. This paper suggests that trade did not occur, not through the lack of opportunity, but rather, because both parties were interested in the same types of natural resources.

Superficially, the route to the Black Sea has much to offer. It is shorter than either those routes across Anatolia or the Al Mina route. Unfortunately, there is almost no archaeological evidence to substantiate use of this northern route. None of the Urartian cities have yielded quantities of Greek wares. Furthermore, there are serious questions concerning the actual date of the Greek colonization.

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In order to understand the relationship between the Greeks and the Urartians it is necessary to note the nature of the economy of the peoples who lived north of the Kara Su. The coastal areas, along the southern shores of the Black Sea made desirable bases for the exploitation of the rich fishing resources of the region. It has been suggested that Homer's knowledge of the Black Sea was gained from these fishermen [Boardman, 1980: p. 247]. Homer is so ignorant of aspects of the Colchis that his date must have come from a secondary source before the time when Greek overseas exploration had supplied a firm body of information on the area. Although, for the most part, the coastline is rugged, there are a few places which provide adequate protection for a small fleet. The ports at Sinope and Trabzon are two of the larger and better known of these. However, for the needs of a small fishing fleet such grand sites were not necessary.

Archaeologically, there are several problems in dating the Greek presence in this part of the Black Sea. There has been no evidence of fishing villages along the coast. Part of the problem stems from the difficulty of doing archaeological work in the region. Yet, some work has been done at Sinope. The earliest remains, a small Greek temple, date much later than the foundation date for the site, as supplied in the literary evidence [Akurgal and Budde, 1956: pp. 41ff.]. The excavations at Trabzon also indicate that the earliest remains are much later than the literary evidence would suggest [Maximova, 1956: p. 2ff; Hind, 1983–4: p. 95].

If one assumes that Greek colonization spread from the mouth of the Black Sea in a radiating fashion along the shores, the date of colonization of sites, such as Olbia and Torek provide a *terminus ante quem* for both Sinope and Trabzon.

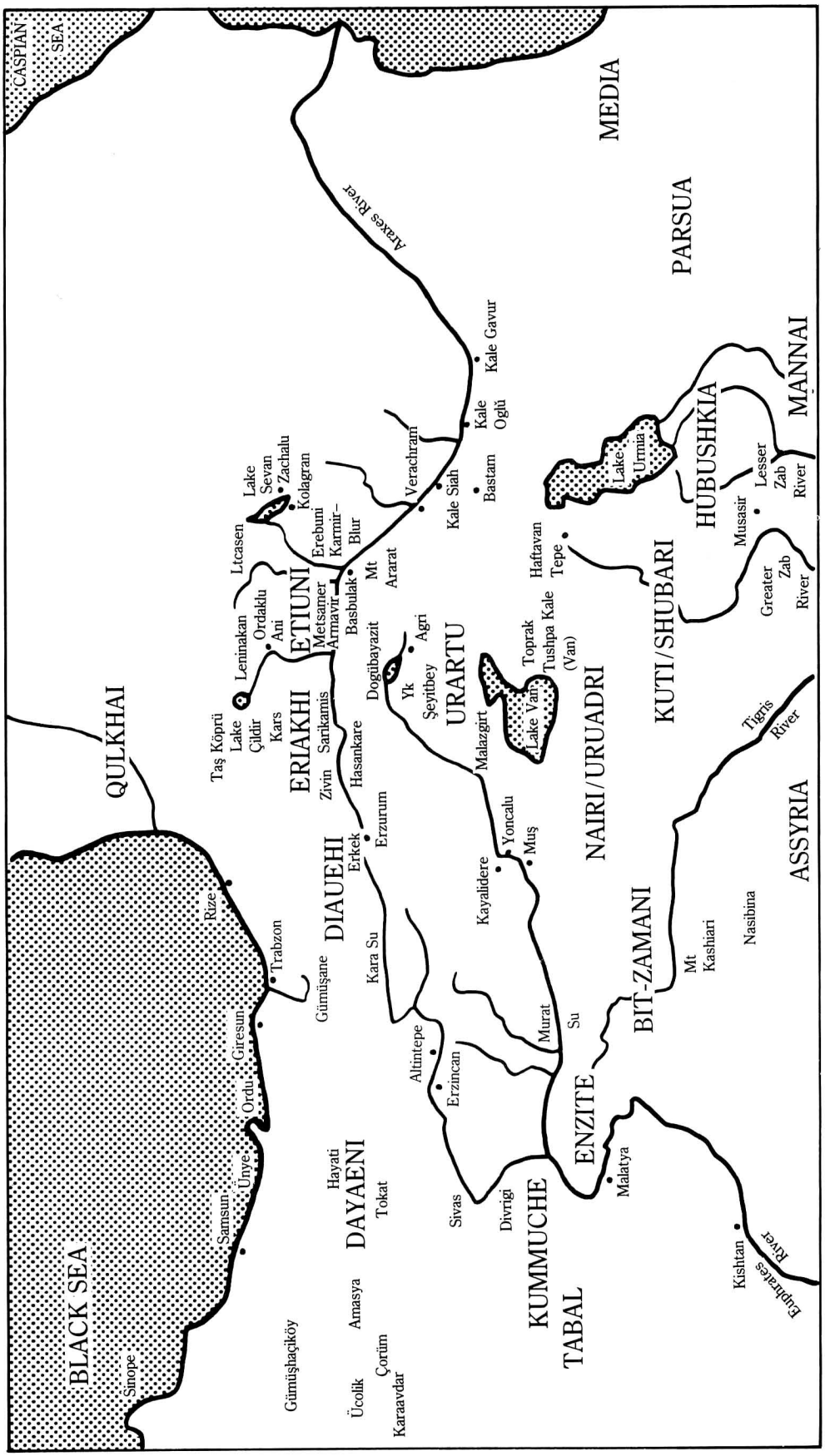
The area at the mouth of the Bug and Dniepr Rivers has been one of the centres for field work in the Soviet Union [Hind, 1983–4: pp. 71–97]. Studies of the palaeo-geography and environment suggest that the Black Sea was higher than at present. This was caused by warmer, wetter conditions [Hind, 1983–4: p. 79]. An example of the changes is the creation of the island city of Berezan. During Classical times the island was part of a peninsula which jutted south from Viktorovka, near Ochakov [Shilik, 1975: p. 52]. At some time, the water rose and the lands at the mouth of the Bug and Dniepr Rivers flooded to create islands.

The excavations at Berezan have uncovered material dating to the end of the VIIth-early VIth centuries B.C. [Kopeikina, 1981: p. 193]. A slightly earlier date has been suggested by those who wish to see the site associated with the Olbian control of the region [Karyshkovsky, 1967: p. 85ff.]. It ceased to be a major centre at the beginning of the Vth century B.C. [Hind, 1983–4: p. 79]. Clearly colonization had reached far into the Black Sea by the VIIth century B.C. [Graham, 1958: p. 35ff.].

The excavations at ancient Torek, south of the mouth of the Kuban River, give similar insight into the possible *terminus ante quem* for the settlement of the southern shores of the Black Sea. While examples of Greek wares are rare, a few pieces can be dated to the late VIth century B.C. [Tyumenev, 1938: p. 245ff.].

While the lack of archaeological excavation and survey has been partly to blame for the dearth of information concerning the earliest periods of Greek colonization, natural aspects also play a role. As noted, the shape and depth of the sea has altered. Perhaps, some of the sites, along the old shores, have been flooded. The climate of the area is also of some importance. High fertility and the abundance of rain have turned the area into a virtual rain forest [Dewdney, 1971: p. 114; Williams, 1972: p. 35ff.]. If the first buildings were of wood, they would be very difficult to locate since the sites would have been small with little depth of deposit.

While the *raison d'etre* for colonization was fishing, the major settlements which grew in such areas as Trabzon and Sinope were established for trade with the inland regions. It is here that Urartu enters the picture. The area north of the Kara Su was very rich in most of the major metals [Ryan, 1960: passim;



Map 1 Urartu and Surrounding Regions

Karajian, 1920: passim]. The Urartians were very interested in these items. The location of the Greek colonies also suggests that they attempted to trade with the inland regions to gain this important source of wealth. Trabzon, in particular, is located near the mouth of the Değirmen Su. This river flows from the metal rich regions near Gümüşane [Ryan, 1960: passim] and, as such, would have provided a good transportation route to facilitate trade. As will be noted, metal sources also exist along the coast [Ryan, 1960: passim]. These would have been easily acquired by the colonists.

However, before looking at this material, it is necessary to explore the literary and archaeological evidence for the settlement of the area. Generally, the literary evidence would suggest that colonization occurred in the VIIIth century B.C. However, as has been pointed out, the majority of the archaeological evidence would suggest that Greek settlement dates to a much later period, in the VIIth century B.C. This is one of the few cases where the literary evidence appears slightly stronger than the archaeological evidence.

Literary Evidence

While, for the most part, it is impossible to date the settlement of the Pontic region exactly from the literary sources, there are several references which support a date in the first quarter of the VIIIth century B.C. for the Greek colonization of the area. Others suggest a date in the second quarter of that century for the development of trade with the hinterland. This seems consistant with the supposed purpose of these Greek trading colonies. While the fishing villages did not need contact with the interior, the trading colonies, which were subsequently established, must have needed this inland trade in order to function. As such, it is not surprising that shortly after the establishment of the colonies, there is evidence for the spread of their interests inland from the coast.

Central to the discussion of the early dates for the colonization of the Black Sea by the Greeks is the date of 756 B.C., given by Eusebius, for the foundation of Trabzon [IV. 56.5]. The majority of the other Greek and classical historians, either contemporary or later, accept this date, either independantly, using the same sources or else, based primarily on Eusebius [Boardman, 1980: p. 250]. As such, one can assume that Eusebius reflects the common understanding of the situation, correct or incorrect, as known at the time of this writing.

In accepting the date of Eusebius in the *Chronica,* as accurate, one is left on less sure ground when dealing with the foundation date for another of the important Greek trading colonies along the southern shore of the Black Sea, Sinope. Similar to Trabzon, the importance and choice of Sinope was based on the high quality of the natural harbour. The modern town, built over much of the ancient Port, lies on a neck of the penninsula which juts eastward into the sea. The main harbour is on the south side, protected from the pre-dominant north wind. This site has many more advantages than Trabzon, whose harbour, although natural, is not nearly as large or well protected. It is, therefore, not surprising that Sinope became the more important of the two during classical antiquity.

The evidence of the foundation date for Sinope is indirect, and contradictory. Similar to Trabzon, Sinope was founded by Milesians [Eusebius followed by Barnett in Weinburg, 1956: p. 229]. It has been suggested that the need for land was the main interest of the settlers [Boardman, 1980: p. 248]. While this is probably quite true, it does seem a long distance to go simply to find land. Another theory is that wider trade relations were needed to supply the mother cities, in this case Miletus, and that these colonies were established to enrich them [Boardman, 1980: p. 248]. Literary evidence is also unanimous in its attribution of Sinope as the mother-city of Trabzon [Graham, 1958: p. 33]. Again, this attribution makes good sense since when dealing with the foundation dates from the archaeological evidence it appeared possible that the cities near Propontus were established before those which were further away. There-

fore, since Sinope was closer to the Propontus area than Trabzon, it was established first, dating the foundation to a period prior to 756 B.C. Unfortunately, the only two references which directly relate to the foundation of the city are the detailed account in Pseudo-Scymnûs [lines 994–7] and a date, given by Eusebius, of 631 B.C. [IV. 56.5].

Pseudo-Scymnus gives a somewhat mythological account of the founding of Sinope [line 994]. Yet, in lines 994–7 there is a reference to a Milesian exile, Habrondas, who is considered by this "historian" to be the founding father of the Greek colony [line 995]. The detail of the account suggests that Pseudo-Scymnus had a large and detailed body of oral or written material, now lost, at his disposal [Boardman, 1980: p. 250]. Although, much of the detail is open to question, it is safe to assume a certain amount of accuracy in this part of the account.

Although dated, Bilabel's research has led to a possible solution of the apparent conflict between the views of Pseudo-Scymnus and Eusebius [Bilabel, 1920: passim]. The results of his detailed analysis of the sources which may have contributed to the works of both historians indicate that both accounts may be substantially correct. The foundation date referred to by Eusebius may have been not the foundation date of the original city, but rather, a re-foundation date. The archaeological evidence would support the date proposed by Eusebius [Onaiko, 1966: passim]. However, the archaeological evidence from elsewhere supports the view that the Greek colony had already been established and, therefore, the material from the excavation and the dates provided by Eusebius refer to the later period. The later historian, Herodotus, provides some important details concerning the possible gap in occupation of the Greek colonies along the southern coast of the Black Sea. In his account he states that:

> "...the Cimmerians seem to have fled from the Scythians into Asia and to have settled on the peninsula where the Greek city of Sinope now stands..." [IV. 12.2].

While this statement has been frequently misunderstood and misinterpreted to support a lowering of the foundation date of Sinope to that suggested by Eusebius, it is not necessarily the case [Graham, 1982: p. 119].

While the direct evidence from the literary sources is a strong indication that the first settlement in the Pontis, by the Greeks, was in the VIIIth century B.C., it is by no means the only genre of literary documentation which deals with the Greek involvment in the region. Aside from the historical material already noted, the fragmentary work of Eumelus of Corinth, a poet of the VIIIth century B.C., makes reference in line 8 of one of his works to the fact that, in his opinion, the sea nymph, Sinope, was the daughter of Asopos [Will, 1955: p. 124ff.]. While the significance of this mythological work appears to have been lost, with the rest of the text, by the VIIIth century B.C. a mythology of a highly developed form, dealing with genealogies, had developed concerning the history of Pontis [Will, 1955: p. 127].

The last fragment of literary evidence which can be brought to bear on the question of the date of the Greek penetration into the Black Sea is the famous account, preserved by Homer, in the *Odyssey,* of the travels of Jason in search of the Golden Fleece [Book, XII]. Clearly the story of Jason and the Argonauts was not invented by him, but rather, it appears that Homer was the scribe of a series of oral traditions which he brought together into one complete work [Gras, 1984: p. 12]. Another version, more detailed in fact, can be found in the works of Apulonius of Rhodes [Apulonius, II. 549ff.]. The main emphasis of this study is the passage of Jason and his followers through the Bosphorus. It is here that the connection between the sources employed by Apulonius and those used by Homer is made the clearest. In the words of Homer:

> "...And she (the ship D.J.G.S.) also would have been swiftly dashed against the great rocks, but Hera sent her past for she loved Jason..." [XII. 70].

There is a parallel when compared to those of Apulonius:

> "...In one direction there are overhanging rocks against which a great wave of Amphitrite roars and dashes. The beloved gods carry Ambrosia to Zeus the Father, but the smooth rock takes its toll of them everytime they pass, and the Father sends another to make up the number. No ship of men which approaches this place has any escape whatsoever, for the waves of the sea and storms of deadly fire carry it off, together with the planks of the ships and the bodies of the men..." [III. 825].

Clearly Winfield is correct that the verses of Apulonius, and then, by inference, those of Homer, refer to the passage through the Bosphorus [Winfield, 1977: pp. 151–66]. Winfield also asserts that the probable goal of the voyage by Jason was the Colchis [Winfield, 1977: p. 165]. Not only does it fit a general description of the Colchide region, but also, the goal of the voyage, the search for the golden fleece, has, correctly, led many scholars to the view that the land of Asia, should be located in the west rather than the east [Robert, 1921: p. 758]. However, more to the point, Homer's account is suitably vague to allow for the supposition that he had personally no knowledge of the Black Sea and may have used the accounts of other Greeks concerning the Bosphorus and the Colchis to create a suitably horrific setting for his mythical voyage.

In summarizing the literary evidence concerning the Black Sea it appears that the historical and mythological writings are consistant in the view that the Colchis region was known to the Greeks at a very early date and that it was settled by them, at least, by 700 B.C. The evidence concerning the foundation date for Sinope allows one to suggest that this knowledge of the area was begun much earlier, perhaps, as early as 790 B.C. The direct historical accounts, by far the most dependable, suggest that during the early part of the VIIIth century B.C. Greek colonists from Miletos settled along the Anatolian coast of the Black Sea. By accepting the statements of both Eusebius and Herodotus as accurate, it is also possible to suggest that the Cimmerians may have disrupted the Greek settlement of the Black Sea ports after having been defeated by the Urartians, or rather, after defeating the Urartians in battle but being unable or unwilling to follow up on the advantage. The disruption necessitated the re-establishment of the Greek cities in the third quarter of the VIIth century B.C. (circa 631 B.C.).

Archaeological Evidence

In the introduction, some of the archaeological evidence was presented to illustrate a few of the problems in trying to date the colonization of the southern shores of the Black Sea by the Greeks. While the literary evidence may indicate a relatively early date, the material which has been excavated indicates a more late date for this colonization. The lack of proper archaeological work remains one of the major problems. Burney's, rather unsystematic, survey of the Sivas and Tokat regions remains one of the few valuable pieces of research into the nature of the habitation in this section of Anatolia [Durbin, 1971: pp. 99–124]. The indications from this, and other limited archaeological work, is that during the Iron Age there was a dramatic increase in the population of this region [Durbin, 1971: p. 101]. The increase in population is demonstrated by the increase in the numbers of new sites established and the apparent increase in size of some others [Durbin, 1971: p. 101]. This would suggest that the area was prospering under an economy which had established previously unknown levels of wealth. While the newly found wealth, opened up by the understanding of the potential importance of iron, was one aspect, the development of large scale trade with the Greeks to the north and the Urartians to the south resulted in two, large, well financed, markets for the metals of the northern tribes, especially the Dayaeni and the Diauehi (Map 1).

In interpreting the archaeological material, the site of Sinope remains as a crucial element in the discussion. It is one of the few sites, along the coast of the Black Sea, which has been excavated with

relatively modern archaeological techniques. E. Akurgal and L. Budde excavated the site and recorded that the earliest material dates to the end of the VIIth century [Akurgal and Budde, 1956: p. 47]. This is consistant with the 631 B.C. date proposed by Eusebius. Akurgal also notes that this date corresponds to the earliest material known from the other Greek sites along the coast [Akurgal and Budde, 1956: p. 47]. While this appears to be correct, Akurgal falls into the tempting trap of stating that settlement did not occur on the Black Sea, to any meaningful extent, before 631 B.C. [Akurgal and Budde, 1956: p. 47]. While this is consistant with his generally low chronology he suggests that the literary evidence refers primarily to pioneering exploits along the coast which did not leave recognizable remains [Akurgal and Budde, 1956: p. 48]. Firstly, to dismiss the literary evidence cited above as referring to pioneering exploits is to disregard a large portion of the available evidence. Eusebius and Pseudo-Scymnus were not writing concerning limited Greek penetration, but rather, they discuss Milesian colonization. In order to dismiss this it is necessary to redate the writings of these two men, something which cannot be suggested on available evidence. Akurgal, an art historian, appears to have misunderstood the significance of these historical narratives and has concentrated on the objects discovered. Secondlly, as an archaeologist, he should have realized that the material which he found provides an important *terminus ante quem,* but not, as the excavator appears to suggest, a sound *terminus post quem.* In assessing the excavations at Sinope, the excavators have uncovered an important site which illustrates the Greek pattern of colonization of the Black Sea and can be dated to about 631 B.C. The debatable point is whether or not the site uncovered by Akurgal represents the first occupation of the area or is an earlier site to be found either in the same area as the later colony, or perhaps, in a nearby location.

The problems of interpretation of the archaeological material appear even more obvious when considering the nature of the site and the limited nature of the excavations. As previously noted, Sinope is located on a rocky peninsula which protrudes into the Black Sea. Eusebius' description states that the location of the ancient city is the same as the modern town. However, Eusebius is referring to the second foundation. In fact, Graham stated that when he visited the site it was possible to detect Hellenistic, Mediaeval and modern walls in various parts of the modern town [Graham, 1958: p. 35]. Even if Akurgal had been able to excavate a large part of the site, now impossible due to the amount of modern construction, there is no guarantee that he would have been able to find architectural remains of the earliest levels. Given the almost continual occupation of the area it may be that the earliest Greek site is reflected by only a few sherds. The excavated area, on which Akurgal and others support their late chronology, is across the isthmus, where he found the VIIth century B.C. cemetary in close proximity to Mediaeval and modern burials [Akurgal and Budde, 1956: Fig. 1]. Even if this was a the site of the VIIIth century B.C. cemetary the problem of erosion and destruction by later builders still exists. Akurgal was not able to work in the areas of the more modern burials. Therefore, since this whole area appears to have served as the ancient cemetary, the excavators were unable to work in one of the most likely places to find the earliest burials.

Aside from all of the problems, the work documents the foundation, or perhaps, the re-foundation of Sinope. While the lack of early material in the area of the VIIth century B.C. cemetary would normally argue in favour of the late date, the literary evidence and the archaeological results suggest a major change in the occupation of the site in the VIIth century B.C. Given the nature of the events associated with the Cimmerian invasion, it is not surprising that major gaps appear in the archaeological record for this tumultuous period.

Far to the west is the site of the ancient Greek city of Daskyleion, some twenty miles south of Cyzicus. The result of Akurgal's excavations, bearing in mind his apparent preference for a late

chronology, is that the earliest levels of the site date to about 700 B.C. [Akurgal, 1956: p. 15f.]. This is significant, since it suggests that before settlements could be extablished inland, it would have been neccessary to establish coastal sites, well enough established to promote colonies of their own in the interior.

The presence of a trading city in the interior suggests that the view, that the reason for the establishment of the coastal colonies along the southern Black Sea coast was to provide a base for the exploitation of other areas further to the north-east, is not totally correct. While these were certainly important considerations, the existance of a site such as Daskyleion illustrates that at this early time the Greeks were interested in exploiting the interior trading with the local people [Boardman, 1980: pp. 251–2].

All of this information, taken together, makes it seem likely that the Greeks settled the Pontic and Colchide regions in the early part of the VIIIth century B.C. Literary evidence suggests that Sinope was founded well before 756 B.C. An early date for Sinope is necessary if it can be assumed that Eusebius is correct in attributing the date of 756 B.C. for the founding of Trabzon by colonists from the mother-city of Miletos who had first settled at Sinope. While there is some archaeological uncertainty, there is nothing in either the literary or the archaeological evidence to cast significant doubt upon this interpretation. The archaeological evidence, although late, suggests that by 700 B.C. Greek colonies were firmly established along the Black Sea and there had been significant penetration into the interior.

In looking at the products which the Greeks sought from the region of the Black Sea, it is clear that they were more varried than the interests of the Urartians, which appeared to be mainly in terms of mineral wealth [Slattery, 1987: passim]. In the case of the Greek colonies fishing appears to have been one of the central features, at least during the early stages.

As noted previously, the first information which the Greeks received concerning the Black Sea coast came from the fishermen who worked there. The fishing industry is well attested in the ancient literature and some references are to fishing in the Black Sea. Dionysus of Byzantium makes several references to fish from the Bosphorus and Cyzicus regions [Dionysus, 1, 1.7; 4, 1.2]. Sinope, as previously noted, one of the best harbours along the southern coast of the Black Sea, was the home of the Roman Black Sea fishing fleet [Magie, 1975: vol. 1, p. 184 and vol. 2, p. 1076]. If trade between Urartu and the Greek colonies did occur, the main element of interest to the Greeks would have been grain. Urartu was a major producer of grain [Aroutunian, 1964: passim]. The need for this extra grain is based on the view of Graham that many of the islands of the Aegean, such as Chios, had developed into large slave-states, a fact supported by the great increase in the size of the military and the presence of slave ownership titles which list an unusually large number of foreign names [Graham, 1982: p. 215–6]. The rapid increase in population suggests that it would have been unlikely that the island's economy could have dealt with the new needs. Additional supplies could be gained through trade with the Urartian empire. However, before attaching much importance to trade between the Greek colonists and the Urartians is worth noting that large supplies of grain could be gained from areas much closer to the Aegean. The central part of Anatolia is a major grain growing region [Dewdney, 1971: passim]. Therefore, it would have been easier, and perhaps cheaper, to import grain from the central part of Turkey rather than going to the far east and importing it from Urartu.

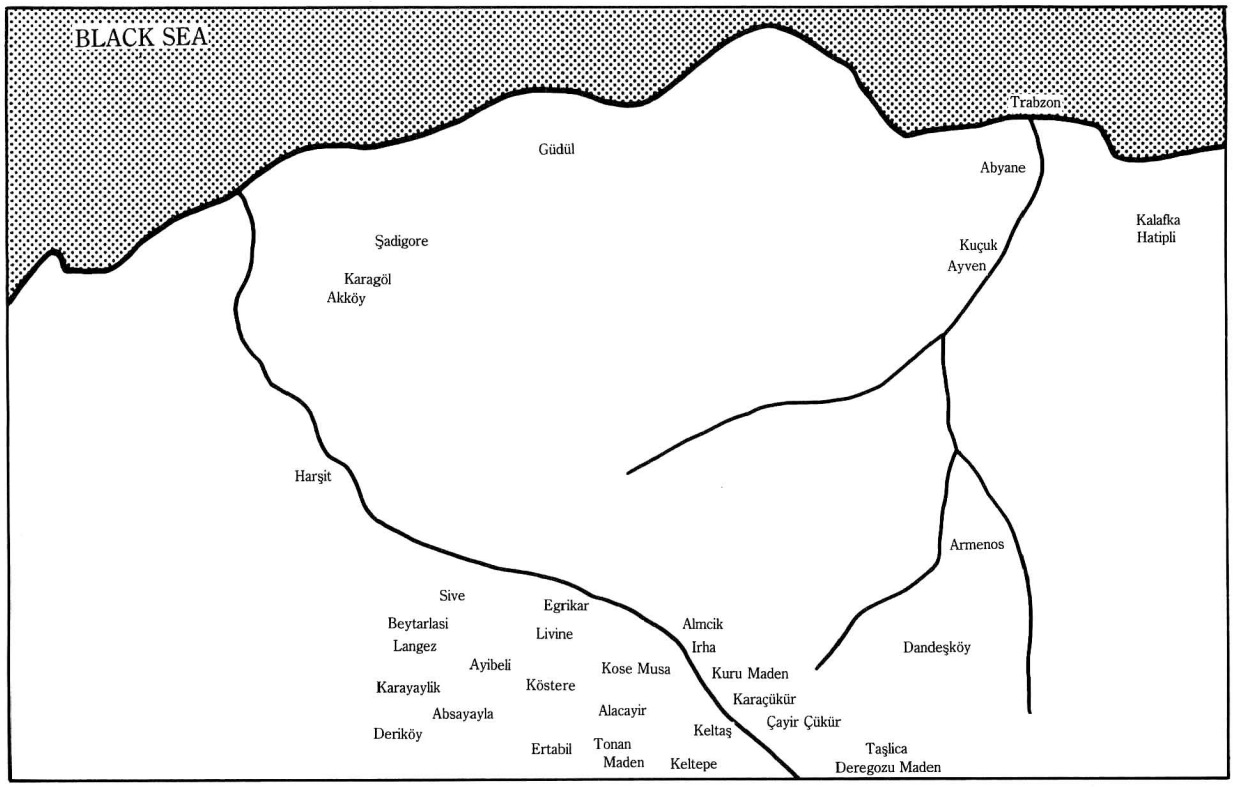
Another potential feature of trade between the Greeks and the peoples of the Black Sea was the exchange involving slaves. As noted previously, the Greek islands appear to have developed into large slave holding areas. Boardman suggests that slaves were one of the items which the Greeks frequently traded and, therefore, they may have been interested in acquiring slaves from the northern regions along the southern shore of the Black Sea [Boardman, 1980: p. 197].

As noted throughout, the main element which provided the great wealth of this northern economy was the vast mineral resources of the area. There is some indication that the Greeks were interested in this wealth. Greek references to Cappadocian red ochre, referred to in the texts as *miltos* (μιλτος) and the mention of Chalybian steel indicate that the Greeks had a knowledge and interest in the metal resources of Anatolia [Boardman, 1980: p. 197]. In dealing with the Black Sea coast, the importance of gold can be illustrated in the references, already noted, to Homer and the quest of Jason and the Argonauts for the Golden Fleece. The story of the Golden Fleece opens several areas of interpretation concerning the nature of Jason's quest. While the artistic impression of the item is often of an actual golden animal there has been a great deal of interest in another possible explanation of the Golden Fleece [Gras, 1984: p. 12]. It seems that even in modern times a sheep's skin, with the wool still attached, is used for removing gold from the alluvial deposits [Gras, 1984: p. 12–3]. It is possible that this activity was passed down through the pseudo-history or mythology of the region in the form of an actual golden animal. If this interpretation is correct, it illustrates that the Greeks were well aware of the riches of the northern region beyond Urartu. The alluvial gold may have been one of the items which they sought and was one of the main forces behind the aims of the Greek mother-cities to colonize the Black Sea.

In the western frontier zone, minerals were an exceptionally noteworthy part of the military and economic strategy of the Urartian state. Prehistoric mining provides much evidence for the long history of this activity [de Jesus, 1980: p. 1ff.]. Although most of the early mining involved only the surface collection of ores and placer deposits, it developed into a more exact science with improvements in the methods of locating and extracting sub-terranean ores [Agricola, 1950: p. 64f.]. Of particular importance, in this regard, was the development of iron tools. Their strength and longevity is noted by Shalmaneser III in the records of his construction of a tunnel through the side of a mountain [Lehmann-Haupt, vol. 1, 1910: pp. 242–61].

Although there is some evidence that prehistoric man made limited use of mining, the role of such activity in Pontis was clearly secondary. Without highly developed smelting technology it was necessary to have very pure ores which could be simply pounded into plate for future use [Agricola, 1950: p. 51]. In this area, there are no sub-terranean deposits of sufficient purity to allow for this basic technology [Ryan, 1960: p. 20]. However, alluvial gold, of very high purity, is quite common [Tylecote, 1962: p. 3f.]. The golden fleece of Greek literature refers to such Pontic gold [Book, XII]. This is also true of Strabo's account of manual gold screening using sheep's skin, hence the golden fleece [XII. 3.19–22]. The reference to Pishon, in Genesis 2:10–12, has occassionally been linked to the Choruk Su [Karajian, 1920: p. 145].

Although alluvial gold was important, full exploitation of the mineral resources only occurred with the introduction of smelting. This allowed for a greater number of less rich ores to be used. Smelting, coupled with the use of iron tools, resulted in a previously unknown level of prosperity to be reached in the Pontic region. The exploitation of alluvial gold limited work to the banks of the major rivers. Now, it was possible to open up much of the interior of the country. It appears that by the time of the Urartian empire most of the major metal sources in the region were known. Although it is impossible to firmly date much of the mining activity to the Urartian period, the archaeological and epigraphic evidence point to large-scale mining activity north of the Kara Su. The interest shown, by both the Urartians and the Greeks in the area, would seem to confirm this view. In assessing the potential mineral deposits, it is possible to note those mined prior to the Genoese. By limiting mining to only the richest and most easily reached sources it is possible to establish a minimum picture of ancient mining.



Map 2 Frontier mineral resources

Gümüşane Region (Map 1)

While the location of Gümüşane, near the Urartian frontier, would have made any of its mineral resources important to the economy, the fact that this region is one of the richest areas suggests that it was the prime supplier of minerals to the Urartian state. Gümüşane is also only 66 km. south-west of Trabzon. Therefore, its potential importance is not only related to Urartian trade, but also, as a main supplier of Greek needs.

Aside from the very rich ores located near the town of Gümüşane, there are other important deposits in the area. As noted in Chart I, gold was an important part of the local economy. The deposits at Gümüşane are among the richest in the entire northern frontier zone [Ryan, 1960: passim]. In addition to those deposits listed in Chart I, there are other sources where gold may have been extracted, as one of the secondary metals from other mines. Near Güdül are gold ores assayed at .03 oz/ton [Ryan, 1960: p. 29]. The copper mine at Irha also contains gold assayed at .018 oz/ton [Ryan, 1960: p. 29].

Silver appears to have been another of the products from the Gümüşane region. Sites such as Gümüşane and Dandeşkoy, important gold producers, were also major silver providers. Of those sites listed in Chart II, Keltaş stands out as one of the more important sources.

In assessing the importance of lead in the Gümüşane region, it is necessary to look at the lead deposits in relation to the silver sources. Lead served as a flux for silver smelting to help lower the melting temperature. The quality of the lead ores is particularly important in the case of Gümüşane (Chart III). Here high levels of silver and lead are found. This would serve to increase the economic value of this ore.

Unlike the majority of the minerals found in the area, copper is not common and is of low quality. The dominant factor in relating copper to the economy of Urartu is the close proximity of the two areas.

Finally, iron is another of the important metals associated with Gümüşane. As seen in Chart V, while there are few producing areas, the ore from these mines is particularly rich.

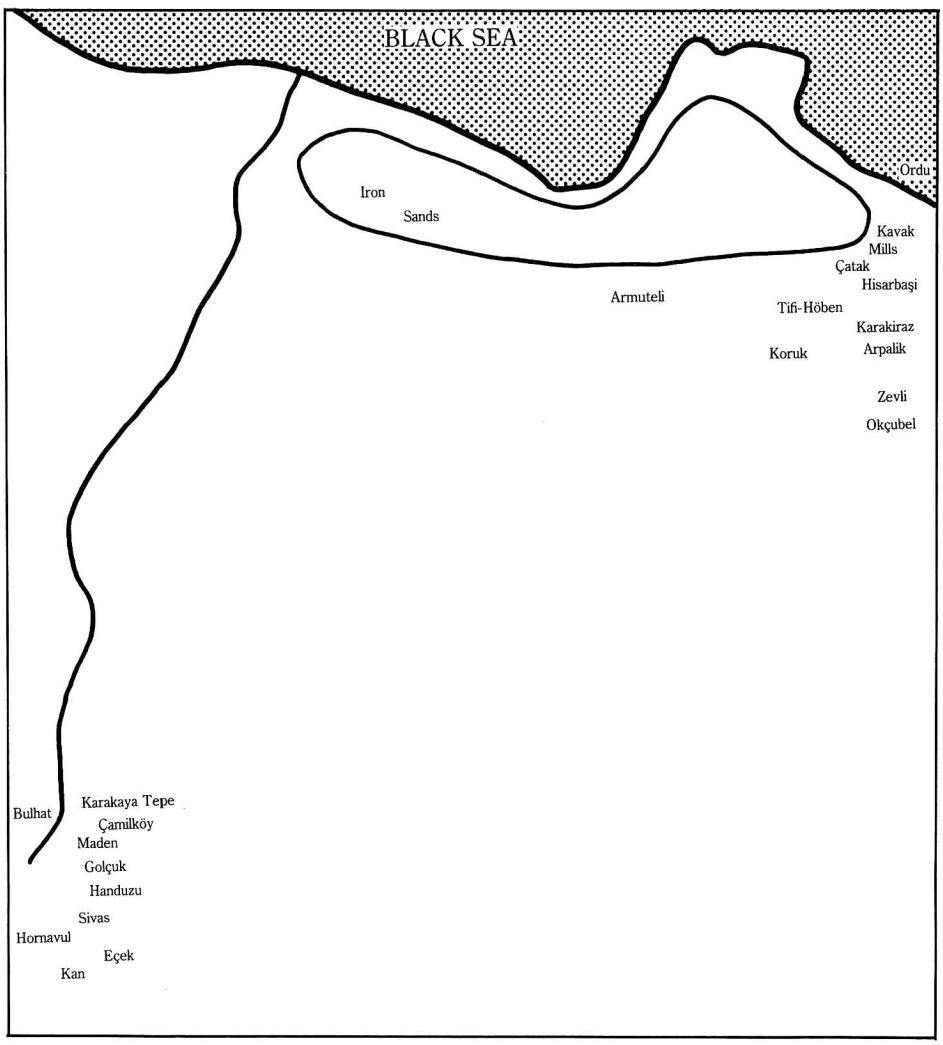
Gümüşane appears to have been the main supplier of minerals to Urartu on the basis of both its close proximity and the uncommonly rich nature of the ore bodies in the area.

Ordu Region (Map 3)

Aside from the possible use of alluvial gold deposits, there is little chance that much of the mineral wealth of the Ordu region reached Urartu. That gold was mined in Ordu is shown by Strabo, who refers to mines at "Syspritus near Caballa" [XI. 9]. This reference may refer to the gold deposits at Artewen, near the Taljun River, or perhaps, Alindjeriv. This area was visited by Memon, the general of Alexander the Great [Barnett, 1984: pp. 366–8]. Besides the major sources, the copper mine at Hisarbaşi contains gold valued at .02 oz/ton and trace samples of .06 oz/ton are known from Zevli and Okcubel [Ryan, 1960: p. 37]. Deposits at Çatak Karakiraz and Kavak Mills assay at .02 oz/ton while at Findiklik the value is .04 oz/ton [Ryan, 1960: p. 37].

The deposits of silver in this region are not nearly as high as those in Gümüşane (Chart II). This is also true of the lead ores. Only four sites were mined in antiquity (see Chart III). The last of the major ore deposits are those copper ores. These have been noted in connection with gold. However, even these are not particularly rich.

In assessing the role of the Ordu region it is clear that given the relationship between Gümüşane and



Map 3 Frontier mineral resources

Urartu there was little need for the Urartians to be too concerned about minerals from Ordu. It appears most likely that the econmy of Ordu was based on its ability to trade with the Greek coastal colonies.

Rize Region (Map 4)

Rize is a difficult area to relate to the economy of Urartu. While distance and other concerns would tend to limit its role, the majority of the deposits are located at Latum. Such a wealthy centre could have had a role in the Urartian economy. Latum contains all of the major deposits of gold, silver, lead, copper and iron ores [Ryan, 1960: passim].

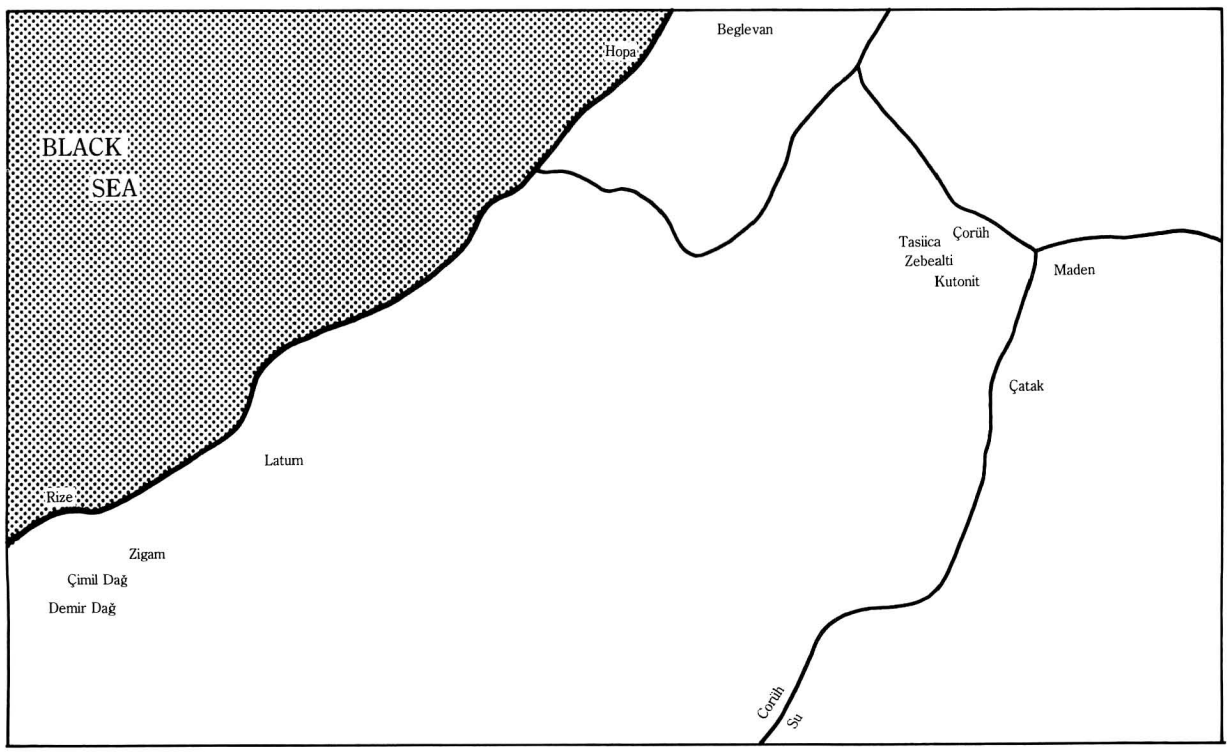
Amasya Region (Map 1)

Similar to the Rize region, all of the major metal sources are located at a single centre. Although Gümüşhaciköy is located a great distance from Urartu, it is possible that the great wealth of the area contributed to the Urartian economy.

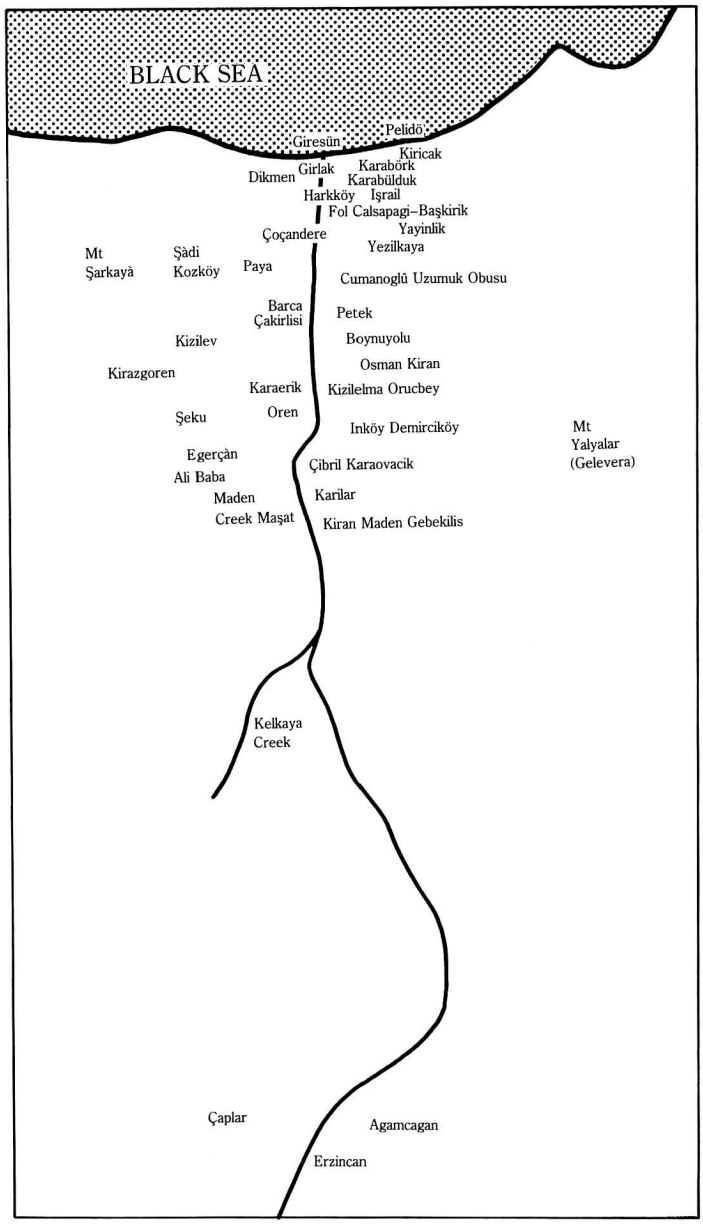
Giresun Region (Map 5)

Although not rich in gold, this region contained many profitable silver deposits. While the assays of these ores are not high, they are found in a limited area. About 40% of all of the silver and lead deposits in the northern frontier are located in this small region [Ryan, 1960: passim]. A similar situation exists when dealing with the copper deposits (see Charts II–IV). However, the basis of the mineral wealth of the region was its iron deposits. The assays of iron are consistantly high (see Chart V) and may have played a role in trade with Urartu.

While iron may have been important to Urartu, it appears that Giresun traded primarily with the Black Sea colonies. The distance from Urartu and the indifferent quality of the ore deposits suggests that it would have been unprofitable to ship metals to Urartu when higher quality supplies could be obtained from nearby.



Map 4 Frontier mineral resources



Map 5 Frontier mineral resources

Çoruh Region (Map 4)

While several minerals are represented in Çoruh, the major export would have been silver. The high assays of silver (see Chart II) coupled with major lead elements (see Chart V) indicate that a few centres were major producers. Aside from these metals, only iron is found. While there is only one deposit (see Chart V), the purity of the ore is such that trade may have been profitable.

Trabzon Region (Map 2)

The importance of the Trabzon region rests with the iron sands, located along the coast. Although there are some copper ores, these would have had little importance to the Urartian economy. While Tylecote has assayed these iron sands at a mediocre level of 15.4% [Tylecote, 1981: pp. 137–9], their cost of extraction is minimal. This would have increased their economic value. The question of their value is only limited by the inability of scholars to determine the level of ancient mining.

Erzincan Region (Map 5)

Although there are only two copper deposits in the Erzincan region, their proximity to Urartu would suggest that they were employed by the Urartians (see Chart IV). This is also true of the single iron source in the region (see Chart V).

Erzurum Region (Map 1)

The few copper deposits in Erzurum (see Chart IV) reflect an identical picture to that seen in the Erzincan region. While the quality and quantity of the reserves are missing, the proximity to the Urartian state suggests that they formed part of the northern frontier economy.

Tokat Ragion (Map 1)

Although there is one deposit of copper in the region, at Hayati, Tokat is essentially an agricultural area. There is no indication that this copper deposit played any significant role in the Urartian economy.

Ağri Region (Map 1)

Since the only mineral of any value in this region is lead, it is unlikely that it was mined for Urartian needs. Silver and lead are commonly found in the Pontic region and as such, it is unlikely that lead would have been imported by another area.

Çorum Region (Map 1)

Çorum is the only region where nuggets of copper can be found. Some of these have measured up to 10 kg [Ryan, 1960: p. 33]. While it is impossible to determine the amount of exploitation of alluvial deposits it seems likely that this source of wealth would have been exploited.

Sivas Region (Map 1)

Lead, copper and iron are the three main minerals found in this region (see Charts IV–V). While Maden could have been an important centre of trade with Urartu, it is only the deposits of iron at Divriği which had a clear role. Transportation between Sivas and Urartu is easy and suggests that any rich sources of metals would have been exploited by the Urartians.

The survey of the mineral resources makes it clear that they were potentially of great importance to both the economies of Urartu and the colonies along the coast. However, with the exception of the Gümüşane region, the sources for Urartian metals were different than those which the Greeks exploited. This would tend to limit the amount of contact between the two groups.

However, there is another feature of the Pontic region which may have contributed to the lack of contact between Urartu and the colonies along the Black Sea. The historical geography of the region allows the Urartian inscriptions to be employed in refuting any substantial levels of communication. While always open to question, interpretations of historical geography are valuable at this point to illustrate that the conflict between Urartu and Diauehi resulted in the inability of the Urartian kings to control the trade routes to the sea for any length of time [Slattery, 1987: passim].

The first area to be considered in this way is the region of Dayaeni (Map 1). This area has been noted throughout as one of the regions which may have played a major role in the metal trade with Urartu. This author has located it to the north of the Kara Su (see Map 1). The location of this land to the north of Urartu is one of the few things which appears to be widely accepted amongst scholars [Tanabe et al, 1982: pp. 3–58]. Beyond that there is little agreement.

The latest proposal for the location of Dayaeni, and in fact, many of the lands in the northern frontier region and beyond of Urartu, has been provided by Russell [Russell, 1983: passim; Russell, 1984: 171–202]. He places Dayaeni in the headwaters of the Kara Su and the Araxes River [Russell, 1984: Map 1].

In an attempt to identify the route of Shalmanesar III's campaign of 856 B.C. Russell clearly establishes the basic criteria for the location of Dayaeni [Russell, 1984: p. 185]:

1. Dayaeni is in the vicinity of Urartu
2. It is near the source of the Euphrates
3. It may be near Yoncali where Tiglath-pilesar I left an inscription...

While stating that at best the evidence in insubstantial [Russell, 1984: p. 185], he cites several texts which substantiate his argument. The Kurkh Monolith refers to Shalmaneser III's route through Dayaeni [Luckenbill, 1968: Nos. 594–611]. The route described suggests that Dayaeni is to be located further from Assyria than Suhme:

> "...The river Arsania I crossed. To the land of Suhme I departed...The land of Suhme in its entirety I destroyed, I devastated...From the land of Suhme I departed. Against the land of Daiaeni I descended. The city of Daiaeni I captured in its totality..." [Luckenbill, 1968: No. 604].

The Cameron Annals also place these two lands together:

> "...Asia, king of Daiaeni land, grasped my feet; I received from him tax, tribute, (and) horses...On my return from the very source of the Euphrates I marched to the land Suhni... I left Suhni (and) approached Enzi land..." [Cameron, 1950: p. 23–4].

The Prism Inscription of Tiglath-pilesar I lists Dayaeni as being near to the Upper Sea, while not, strictly speaking, on its shores [Luckenbill, 1968: Nos. 217–267]. This opens up two possibilities for locating Dayaeni. If the Prism Inscription is dealing with the battle being fought by the united kings of Nairi, the Upper Sea which is being referred to is the major lake in the south-western part of Urartu, namely Lake Van. However, if the lake reflects the location of the land of Dayaeni, it is impossible to avoid the conclusion that the Assyrian scribes were familiar with the Black Sea. While the choice of Lake Van is less controversial, the inscription from Yoncali suggests that the Black Sea was known to the Assyrians [Lehman-Haupt, 1907: No. 6]. Here Dayaeni is located nearer to Assyria than the Black Sea. In the text this body of water is called the "Great Sea" [Lehman-Haupt, 1907: No. 60]. This would suggest that the Assyrian sources refer to Dayaeni as being located to the south of the Black Sea.

The Urartian inscriptions also refer to the land of Diauehi (Map 1). This area has been referred to throughout as one of the regions which appears to have supplied Urartu with at least part of its needs for metals. It is possible that Russell is correct in locating the area around the town of Zivin as Diauehi [Russell, 1984: p. 186]. This is based on the interpretation of an Urartian inscription [König, 1955–7: No. 24]. While the inscription does not refer to any particular area it seems Russell is correct, except for the fact that he has accepted the common view that the lands of Dayaeni and Diauehi are basically the same [first suggested by Sayce in Sayce, 1937: p. 399 and followed by most scholars including Russell, 1984: p. 186]. This article suggests that the two areas are not the same. This is a view, while rejected by Russell, is admitted as being possible [Russell, 1984: p. 186]. He prefers to locate Diauehi much to the west while retaining Zivin, near Erzurum, within its borders [Russell, 1984: Map 2].

In suggesting that Dayaeni and Diauehi are not the same, there are several points which can be raised. The evidence would support that Zivin is located in the region of Diauehi, as in the aforementioned inscription from Zivin. The Yazilitaş inscription also comes from the headwaters of the Kara Su and the Araxes River [König, 1955–7: p. 6]. This suggests that Diauehi must also include that particular area.

Superficially at least, this area, in the headwaters of the two rivers, appears to fit at least two of the critieria which Russell suggests when dealing with the possible location of areas in the far north [Russell, 1984: p. 185]. The references to the Yoncali Inscription are somewhat more problematic. Russell correctly points out that there is nothing in the inscription which necessarily associates the findspot with the

places referred to in the text [personal correspondance]. In fact, there is strong circumstantial evidence to suggest that some of the places are indeed not located near the inscription. The supposed location of Tumme near Rowandez in the south [Barnett, 1984: Map 13] suggests that it is possible to interpret the inscription as a reference to the all encompassing victory or domination by the Assyrian kings over the Urartians. Therefore, as it appears that it is not possible to suggest that the Yoncali Inscription was found in Tumme, it is equally impossible to suggest, with any great degree of certainty, that the inscription was found in Diauehi. However, in arguing that it was found in the most northern part of the area which the Assyrians reached it does open up an interesting point. In the second part of the inscription there is a reference in the text to Tiglath-pilesar's victory over the Urartians as far as the "Great Sea" [Luckenbill, 1968: No. 270]. It appears possible that this refers to the Black Sea. The possibility of it referring to Lake Van, the "Upper Sea of Nairi" does not seem to fit since the inscription is found to the north [Russell, 1984: p. 192]. The interpretation of the inscription as referring to Lake Van would necessitate a view that the inscription was a similar situation as a particular king who conquered Great Britain from Plymouth to Glasgow and as far north as Watford Gap. It seems somewhat more plausible that the inscription refers to a body of water somewhat to the north of Diauehi. The only major source of water beyond the normal, northern, location of Diauehi is the Black Sea.

While Russell is correct that the Yoncali inscription is a "cliché", he incorrectly takes this to imply that, as such, the geographical realities which it purports to state are invalid [Russell, 1984: p. 192]. This is one way of getting around the difficulties which any suggestion that the Assyrian army was knowledgeable concerning the Black Sea would pose. Such an argument implies that there were two groups of Assyrian carvers, those who knew the geography of Urartu and who, therefore, managed to get most of the places in the correct order, and those who did not know the area and, therefore, resorted to clichés to express the wide scope of the victory. This seems somewhat unlikely. Firstly, the carver would have had to travel to Yoncali in order to cut the inscription. Therefore, he would have been aware of at least some of the realities of the local geography. It seems that any errors in the carefully supplied text, probably from a royal chronicler who travelled with the king, would have been accidents rather than clear errors of fact. It seems that these texts must be viewed as generally accurate with only a few minor errors, but not, as has been suggested, meaningless clichés.

In referring to the other two criteria for the location of Dayaeni, as suggested by Russell, it becomes immediately obvious that they only marginally narrow the choices for the location of this area [Russell, 1984: p. 185]. The first suggests that Dayaeni lay somewhere near Urartu. This could refer to a location along any border, not just the northern one. The second criterion, while ruling out all but the north and north-west frontiers, still leaves an incredibly large area open for speculation. If the region of Dayaeni lay north of Suhme and south of the Great Sea, then the most likely area for it to be located is north of the Kara Su. In this area there are several routes, especially through Gümüşane and also along the Harşit Su which open to the Black Sea [Slattery, 1987: passim; Birmingham, 1961: Map 1; Winfield, 1977: pp. 151–66].

Burney's objections to any attempt to place Dayaeni much further north than the Bulanik-Malazgirt Plain [Burney, 1966: p. 58] are based on the argument that the distance required to march through this northern region was too great [Russell, 1984: p. 200]. However, while this "minimalist" view has some validity in giving the Assyrian monarch sufficient time to complete a less impressive march, it does not seem to bear up under close scrutiny [for a lengthy rebutal of Burney, see Russell, 1984: passim]. The necessity of locating Dayaeni in the south is based on his opinion concerning the locations of many of the other lands and cities of Urartu [Burney, 1971: passim]. He wishes to shorten the boundaries while others, such as Levine, attempt to extend the range of Urartu [Levine, 1977: p. 135ff.]. While it is unnecessary to outline all of the arguments for and against his views, one can not accept the view which he

has for the location of Dayaeni [Russell, 1984: notes passim and especially No. 56]. The route proposed in this article is only marginally different, in length, than that outlined by Russell [Russell, 1984: p. 200]. As has been pointed out, the inscription from Yoncali does not refer to places in the Bulanik-Malazgirt Plain, as suggested by Burney, nor does the distance necessarily rule the location of Dayaeni, as north of the Kara Su, as improbable. The distance added to cross the Kara Su is not particularly great.

Useful parallels in determining the length of the Assyrian campaign are possible when exploring the debate concerning the Eighth Campaign of Sargon II. As was the case with Shalmaneser's march, it has been suggested that the many routes proposed by scholars are impossible because they are too long and could not be completed in a single season of campaigning [Russell, 1984: passim].

The campaign of Sargon is preserved in a large text in the Louvre [Luckenbill, 1968: Nos. 139–178]. It tells of Sargon's wide ranging attacks on his neighbours in the year 714 B.C. The central publication of the historical geographical importance of this text is supplied by Thureau-Dangin [Thureau-Dangin, 1912]. The route suggested has been open to frequent scholarly debate [Russell, 1984: passim; Salvini, 1967: passim amongst others]. One of the key questions is the relationship between the route and the major lakes of Urartu; Lake Urmia and Lake Van. Many scholars, including Burney and Piotrovskii, prefer the longest route, taking him north of both Lake Van and Lake Urmia [Burney, 1977: p. 155f.; Piotrovskii, 1969: p. 104ff.]. Lehmann-Haupt prefers a route which took him around the south side of Lake Van [Lehmann-Haupt, 1910: vol. 2, p. 317]. Kinnier Wilson appears to adopt a "modern approach" in suggesting that the return was much shorter still, with only a march down the western shore of Lake Urmia [Kinnier Wilson, 1962: p. 108ff.]. As noted previously, it appears that this "minimalist" view is becoming the more popular view amongst scholars. Levine opts for this shorter route [Levine, 1977: pp. 135–51] and Russell sums up the objections of the new school of thought as:

> "There is no solid evidence which supports the hypotheses that Sargon marched around the north shore of L. Van and that Bitlis is ancient Uiais. Such a route is not usually accepted today, being considered far longer than was feasible and also being through terrain which would have been far too difficult for any ancient army..." [Russell, 1984: p. 176].

While suggesting that there is no solid evidence for the long route Russell fails to provide any particularly convincing evidence to rule it out. In determining the exact routes which armies took through Urartu there is a great need for more field work rather than the re-interpretation of long studied texts.

If it is accepted that Dayaeni lay to the north of the Kara Su there is little problem in allowing Shalmaneser to march that far north, as well as, allowing for the possibility that Sargon II could have succeeded in marching along the long route during his campeign. Concerning the campaign of Tiglath-pilesar, or for that matter, any of the Assyrian kings, it is not necessary to consider that the entire army marched the whole route suggested in the texts. It seems more likely that if one accepts the particularly long marches, only a select troop made the actual trek through to such areas as the Black Sea and then returned directly along the same route which was used to reach the Kara Su. It is also possible that the Assyrian army never made it as far as the Black Sea. The inscriptions dealing with the "Great Sea" could reflect a knowledge of the Black Sea which had been gained through secondhand information. The likelihood of the Assyrians not having reached the Black Sea is supported by negative evidence which suggests that the annals do not bear the standard cliché of having washed their weapons in the sea. Given the importance of reaching such a remote area it would have seemed likely that some reference would have been made to this achievment.

However, in attempting to locate the land of Dayaeni, and also that of Diauehi, it is necessary to consider them as being north of the Kara Su, an area to the far north of where Russell would suggest [Russell, 1984: Map 2]. If his suggestion as to the location of the "Great Sea" is accepted then it is

difficult to locate Dayaeni for one is forced to travel a long distance before reaching any large body of water suitable to be labelled the "Great Sea" [Russell, 1984: Map 2].

The location of Dayaeni as north of the Kara Su requires the movement of Suhme north of the Murad Su. By accepting that Tiglath-pilesar's march included the route eastward along the Kara Su, it is necessary to place Suhme south of that river, in the highland region. Unfortunately, there is nothing in the cuneiform inscriptions which refers to the area between Dayaeni and Suhme, and, as such, would suggest that the two lands were continuous, separated by only the Kara Su.

Aside from Russell, Mirjo Salvini has also supplied much information concerning the historical geography of Urartu [Salvini, 1967]. Salvini acknowledges that a more western location for Dayaeni is indicated [Salvini, 1967: Map 1]. The epigraphic material suggests that Dayaeni was located at the source of the Euphrates [Salvini, 1967: passim]. This leaves a number of possibilities. Both Russell and Salvini argue that this should be interpreted as either the Murad Su, or the Kara Su [Russell, 1984: Map 2; Salvini, 1967: Map 1]. However, the rejoinder which Russell points out is of most value; "We do not know where the Assyrians considered the source of the Euphrates to be...we must not exclude the possibility that a tributary of the Kara Su may have been taken to be a source of the Euphrates" [Russell, 1984: p. 186]. Thus, one of the tributaries of the Kara Su could have been misinterpreted as the source of the Euphrates. Allowing for this possibility, it would be logical to place Dayaeni between the Kara Su and the Kelkit Su. This region, the Erzincan-Sivas area, would not be an impossible location for Dayaeni, based on the little evidence we have concerning the local economy. While the Urartian texts identify minerals as the chief product of Diauehi, the Assyrian sources refer to the cattle of Dayaeni [Luckenbill, 1968: Nos. 660–2; Melikishvili, 1960: No. 127]. This suggests that the economies of the two areas were different. This further supports the view that these lands could not have been the same.

Both Russell and, to a lesser extent, Salvini are troubled by the Dayaeni=Diauehi problem [Russell, 1984: p. 185ff.; Salvini, 1967: p. 22ff.]. As has been noted, while many scholars have accepted that the two areas are the same, this auther suggests that the lack of concrete confirmation of their identification and the differences in their economies makes this unlikely. Russell's location of Dayaeni is totally unacceptable [Russell, 1984: Map 2] and is even slightly too far south for Diauehi. If Diauehi and Dayaeni are one and the same, little direct evidence is available [Russell, 1984: note 56]. The strongest argument is the similarity between the two names [Russell, 1984: note 56 and passim]. It has been pointed out in many other cases that the similarity of names does not necessarily mean that the places are the same [Burney and Lang, 1971: p. 137]. Russell points out that this equation of the two names is "usually assumed" [Russell, 1984: p. 186]. However, this is not the type of evidence which justifies a conclusion on which much of the historical geography of the northern frontier region is based. The theory of the identical location of these lands was first suggested by Sayce [Sayce, 1937: p. 399ff.] and adopted by various other scholars, especially German [Russell, 1984: note 56], to solve the problems of the historical geography of the northern frontier. The more "modern" opinion also follows the acceptance of this identification, again based on the similar reason of the similarity of the names [Russell, 1984: p. 187]. Salvini follows the growing consensus of thought, and, while being uncomfortable about locating Dayaeni as far east as the sources of the Araxes River, as proposed by Russell [Russell, 1984: Map 2], places it in the middle area, between Russell's location and the more western areas as suggested here [Salvini, 1967: Map 1]. The problem stems from the acceptance of the suggestion made by Sayce as fact, when none of the evidence is indisputable. Melikishvili presented a paper to a conference in Moscow which accepted this unfounded comparison of names [Melikishvili, 1960a: p. 6ff.].

Aside from the views expressed previously, Burney and Diakonov represented the only major diversions from this otherwise general consensus [Burney and Lang, 1971: p. 137; Diakonov, 1951: pp.

29–39, 205–52 and 255–64; Slattely, 1987: passim]. Burney recognizes that the two names may not necessarily refer to the same place [Burney and Lang, 1971: p. 137]. While, as previously noted, this author is quite willing to accept Burney's location of Diauehi, it is unlikely that his location of Dayaeni can be maintained [Burney, 1966: p. 59–61]. In reading the relevant passages of Shalmaneser's Annals, he takes the text literally [Burney, 1966: p. 59–60]. Shalmaneser III defeated the land of Suhme and then "descended" against the land of Dayaeni [Luckenbill, 1968: No. 604]. Burney is the only one who takes the word "descended" literally. He places Dayaeni on the upper reaches of the Arsanias River, centred, apparently, on his own site of Kayalidere [Burney, 1966: p. 59]. In many ways, as Burney points out, Kayalidere is located in the homeland of Urartu [Burney and Lang, 1971: p. 150]. The Kurba'il statue of Shalmaneser III indicates that Dayaeni and Urartu are two different, distinct, yet related, units [Kinnier Wilson, 1962: p. 95]. Burney's location for Diauehi does not leave a great deal of space for this relatively important region.

Burney's placing of Dayaeni appears to be based on the mistaken interpretation of the Yoncali Inscription and the view that it bears some relationship between the findspot and the places mentioned in its text [Burney and Lang, 1971: p. 130]. As noted, this appears somewhat unlikely. A second point which Burney argues is the lack of archaeological evidence to suggest that Urartu actually extended as far north as the headwaters of the Kara Su, or even less, for this proposed suggestion of the more western location [Burney and Lang, 1971: p. 131]. While the archaeological evidence for this region has been noted, it is also possible to show that Burney's objections on the point are a *non sequitur* even based upon the literary evidence from the Assyrian records. In accepting, as Burney does, that Diauehi and Dayaeni are two separate regions, it is necessary to suggest that the Urartians did not have a close relationship with the latter, since an alternative parallel to the Dayaeni=Diauehi question has not been found. It is unlikely that Dayaeni could be located as close to Lake Van as Burney suggests without there being an appropriate body of epigraphic evidence. The bulk of the written material on Dayaeni comes from the Assyrian sources. Most of this information suggests that Dayaeni was in the neighbourhood of Urartu, but there is no claim, at this time, that it was actually ruled by, or was part of, Urartu. It is not necessary to see the limit of Urartu as far north as the Kara Su, just as it is not necessary to see Dayaeni as part of the mainland of Urartu. Thus, while some of the views expressed by Burney are undoubtedly correct, his arguments do not necessarily support his location for Dayaeni.

Burney is correct that the Urartian empire, at this time, did not extend as far as the Kara Su. There is no reference to Dayaeni and, therefore, Urartu could not have penetrated into this region. However, by the same token, it is impossible to place Dayaeni on the edge of the central heartland of Urartu and still maintain the lack of direct epigraphic evidence related to it.

Finally, in looking at the political situation at this time it is clear that Urartu, and the entire northern region was under considerable pressure. The Assyrian armies had defeated Sarduri II at Kishtan [Luckenbill, 1968: No. 118–9]. The coming of Rusa I to the throne begins a period where Urartu campaigned in the north and recouped much of the lost territory around Lake Sevan [Slattery, 1987: p. 36ff.]. In re-asserting his claims to the basin, he constructed fortresses along the southern shore and Nor-Bayazit on the west [Melikishvili, 1960: No. 265; König, 1955–7: No. 119].

While the victories by the Assyrians in the south and Sarduri's growing weakness contributed to the unsettled conditions in the north, the appearance of the Cimmerians in the far north also added to the problem. According to the Assyrian sources, the Cimmerians launched successful attacks against Urartu.

> "The Cimmerians went forth from the midst of the Mannai and into the land of Urartu they entered... The whole land of Urartu is exceedingly afraid on account of the people of the city of

Bulia...Plunder he has taken..." [Waterman, 1972: No. 112].

Rusa's activity in the north was an attempt to correct this situation.

Elsewhere in the empire, Rusa also attempted to rebuild the administrative system. Burney has suggested that Kayalidere was built to protect the Muş Plain and re-open a key trade route into western Anatolia [Burney, 1966: p. 56]. Rusa also regained the area around Musasir and increased building activity south of Lake Urmia.

As noted, in the north, the growing impact of the Cimmerians was beginning to affect Urartu. These nomads, from the steppes of Russia, are known, primarily, from the writings of Herodotus [Book, IV]. Although there is no evidence to suggest that they actually attacked Urartu, their mere presence on the frontier could not be tolerated. Rusa marched forth to face them and, according to the Assyrian records, was soundly defeated.

> "...The land of Guriania and the land of Nagiu are between the land of Urartu and the land of Gamirra. The latter used to give tribute to the people of Urartu. When the people of Urartu went against the land of Gamirra, and when a defeat was inflicted upon the people of Urartu..." [Waterman, 1972: No. 146].

Another reference in the Assyrian texts, from a spy within Urartu, gives a more full account of this defeat and the revolt by Kakkadanu.

> "...When the king of the people of Urartu went to the land of Gamir, his army met with a debacle, he himself and his district commanders with their contingents have been hurled back...News of Urartu...A great slaughter has taken place among them. Now his land is quiet. His officers have gone, each to his own district. Kakkadanu his commander-in-chief has been captured. The king of the land of Urartu is in the land of Uazaun...Unto the garrisons of the fortified cities which command the border I sent for news of the king of Urartu...When he went to the land of Gamir, his army met with a debacle. Three of his officers, together with their troops, were slain. He himself escaped and entered his own land. His camp has not yet been attacked...The garrison of every fortress on the border sends reports like this..." [Waterman, 1972: No. 197].

Although defeated, Rusa was able to force the Cimmerians away from his northern border. They moved westward, probably into Diauehi [Herodotus, IV. 12.2]. It is tempting to link the abandonment of the Greek colonies, along the shores of the Black Sea, to the upheavals caused by the Cimmerians. What is clear is that the mineral producing areas, vital to the economic well-being of Urartu, had been sacked and thrown into disaray.

In concluding this paper, it can be said that the potential for contact between the Urartians and the colonies was considerable. The trade routes did exist and in the area between the two peoples, there were many mineral deposits of interest to both.

Clearly the Pontic and Colchide regions were an important part of Greek colonial policy during the VIII–VIIth centuries B.C. While one can appreciate the feelings of Strabo who writes that the inhabitants of the Colchis "...practised human sacrifice on strangers, ate human flesh and used skulls as drinking vessels..." [Strabo, VII. 298] clearly the Greeks were willing to accept these personality flaws as well as the difficulties of the voyage through the Bosphorus to gain these potentially important riches.

In outlining the brief history of the Greek colonization of the Black Sea area it is possible to illustrate that while the Greek colonies were occupied during the period of the Urartian domination of the area to the south-east, there was little if any connection between the two areas in terms of trade. As previously noted, the Urartians were never in a position to control the routes from the Araxes Valley through the lands of the Dayaeni and the Diauehi to the Black Sea. As a result trade between Urartu and the areas to the

north must have been limited in the main to trade with their immediate neighbours. While it is possible that on one occassion the Urartian army did reach the Black Sea, this does not appear to have had a lasting impact either on the political or, more importantly, the economic situation. However, one of the main reasons for the lack of contact between the Greeks and the Urartians was that the two groups were interested in most of the same items, primarily metals. Therefore with the possible exception of grain trade, which, as point out, could have been more easily acquired by the Greeks, there was little necessity for trade.

As a result it appears that Dayaeni and Diauehi played a role of mediary between the two groups. If grain was sought by the Greeks it probably came through these northern tribes. Diauehi could have traded metals with the Urartians to gain the grain for further exchange with the Greeks. Another important aspect of this trade was that the metal products found in the Aegean and Italy probably were not traded to the Black Sea colonies. There have been no examples of such metal work found in the regions of Diauehi, nor have there been any found in the limited excavations along the Black Sea coast. However, while both these areas contain certain problems with respect to excavations it is more important that there have been no indications of Urartian bronzes from Miletus. This would seem odd since if the main colonies along the southern coast of the Black Sea were established by Miletus then one would expect that some bronzes, if they had been exported from these Black Sea colonies, would have ended up in the mother-city. This seems to support the view that while trade could have occurred between Urartu and the Greek colonies along the Black Sea, for various reasons it did not.

The literary material confirms the conclusions which have been supplied by the extrapolation of archaeological evidence. As noted the economic potential of the region was great. It was for this reason that both the Urartians and the Greeks were interested in the area. However, as previously noted it appears that while trade between Urartu and the Greek colonies may have been possible, it was not necessary for the benefit of either trader and, therefore, with the possible exception of bronzes which could have travelled this route, it is unlikely that any major trade was conducted between the two groups. Another factor is that Diauehi and Dayaeni lay between the two groups. It is clear that the Urartians were never able to venture far into the highlands and permanent control was totally beyond their abilities. The Greeks were not particularly interested in military control of the area. The size of the colonies and their remote distance from the mother-city made military control impossible. Therefore, with a powerful force between Urartu and the Greek colonies it is possible that the two groups were kept apart so that at most only a very few traders ever made contact with each other.

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CHART I

Region-*Gümüşane* (gold-Troy oz/ton)

Site	*Assay*	*Source*	*Notes*
Gümüşane	51.50	Ryan, p. 10	Very high assay. Importance enhanced by nearness to Urartu.
Dandeşköy	.39	20	
Keltepe	.45	20	
Keltaş	.406	20	Limited value due to low quantites in small seams.
Ordu			
Karakiraz	.36	48	The only major site and thus limits the value of the region in terms of gold production.
Rize			
Latum	.195	48	The assay is based on the results of four samples. Since it represents the only significant gold deposit in the region the importance of this region to the overall economy of Urartu was limited. The distance from Latum to Urartu is also a limiting feature.

CHART II

Region-*Amasya* (silver-Troy oz/ton)

Site	*Assay*	*Source*	*Notes*
Gümüşhaçiköy	35.35	Ryan, p. 76	The only major site in the region. However a fairly direct line of communication with Urartu allows for this source to have been potentially useful.
Giresun			
Çumanoglŭ Uzumluk Obusu	3.75–.39	16	Although lead was an important element distance would limit its importance to the Urartian economy.
Yakinlik	.71	16	Also has small gold deposit. Very limited importance.
Kizilev	6.90	17	
Calşapagi-Başkirik	4.44	41	Primarily a lead mine and therefore the silver deposit is significant.
Civriz-Yesilkaya	4.44	41	Same situation as at Çalsapagi-Başkirik.
Gumuşluk Maşat	1.29		Contrary to its name (Gümüş=silver) the silver values are low in comparison to other metals. There is little indication of ancient mining.
Alibaba Maden Creek	1.29		Same situation as at Gümüşluk Maşat.
Şadegore	5.56		Wide range of profitable metals produced. No one outstanding mineral.
Karagol	5.56		Same as Şadegore.
Akköy	4.13		Associated near to major copper deposits, but at this particular place there is little copper.
Gümüşane			
Gümüşane	3.60	19–20	The richest vein is at 29 m. below the surface. The deposit is associated with lead ores below it. The deposit has a depth of between 28 m. and 44 m. The average assay for the entire deposit is 1.75 oz/ton. Nearby another deposit is assayed at 2.86 oz/ton.
Dandeşköy	9.9	20	Largest assay of this ore is for lead. As such, the value of the silver is increased.
Keltepe	10.96	20	Aside from its gold deposits this silver assay is quite high. Nearby, a second assay of 1.99 oz/ton is known.
Keltaş	16.67	20	Referred to with respect to gold deposits, this area also yielded this high silver content. Also significant is the high levels of lead which as noted previously would make the silver deposit that much more valuable. This deposit is one of the richest in the frontier region.

Gudul	5.69	52	
Taşlica	1.1	54	Old workings known from the site. The assay reflects only the levels of the remaining ore. It is possible that high grade material was mined-out in this area.
Deregozu Maden	1.1	54	Same situation as at Taşlica.
Ertabil	.68	54	Old workings here illustrate the profitability of such low levels.
Livine	.68	54	Same situation as at Ertabil.
Alaçayir	2.0	55	Ancient mining activity known.
Kostere	11.60	55	Same situation as at Alaçayir.
Tonan Maden	11.60	55	Same as above.
Sive	11.60	55	
Langez	11.60	55	
Dariköy	—		Evidence of ancient mining but no assay known.
Karayaylik	—		Same situation as at Dariköy.
Çoruh			
Maden	10.02	22	There are three deposits in this area. An assay of the second was 2.18 oz/ton. These silver reserves are accompanied by useful levels of lead.
Beglevan	1.32	50	Some gold reserves.
Ordu			
Hizarbaşi	3.77	35	Some copper deposits also recorded.
Arpalik	8.61	36	Some ancient mining activity.
Karakiraz	2.55	37	Small amounts of gold but a major lead producing area.
Kiranlik Dere	21.1	37	Highest levels in the area and as such may have played a minor role in the Urartian economy.
Zevli	1.06	37	Mentioned when dealing with gold. There are some copper deposits recorded in this area.
Okcubel	1.06	37	Same situation as at Zevli.
Çatak	2.44	37	
Kavak Mills	2.44	37	
Karakiraz	2.44	37	A second source in this region (see above).
Rize			
Latum	14.27	37	Only major site in the region. Some communication links to Urartu possible. Clearly of secondary importance.

CHART III

Region-*Amasya* (lead-percentage ore per ton)

Site	*Assay*	*Source*	*Notes*
Gümüşhaçiköy	16.7 14.8 60.0	Ryan, p. 10	Only major producing area in the region. Potentially important as the area is also high in silver ore.
Sivas			
Kan	30.0	14	No major silver deposits in the area and therefore its value to the Urartian economy was probably limited.
Ecek	30.0	14	Same situation as at Kan.
Giresun			
Cumanoglŭ Uzumluk	28.12	16	More average readings of 2.20% to .72% are found from this ore. The importance of this region is linked to the Greek markets. However, good communication routes into Urartu may have allowed for some trade between the two areas.
Yakinlik	1.59	16	High concentrations of other base metals.
Kizilev	69.0	17	Potentially important given the levels of silver found here.
Yaykinlik	16.0	39	Associated with other base metals.
Çivriz-Yezilkaya	36.53	40	Associated with significant silver ores.
Paya	4.17	40	

Barca Çakirlisi	—		Reports of ancient mining activity.
Mt. Şarkaya	2.92		This minimum level is calculated from the assays of the ancient slag having a value of 2.17%. Therefore, 2.17+.775=2.92. (.775=minimum profitability level for lead mining) [Slattery, 1987: Chart VI].
Harkköy	?	43	The problem with assessing Harkköy stems from the report of the assay values. The assay of lead given for this area is 1.05%. This appears correct as the sample was taken from slag, and although a little high, it consistant with other slag from the northern frontier zone. A copper assay of 1.03% is also given. However, the second set of assays, also reported to be from slag, are less typical. Aside from the low levels of lead (.58%) all the other minerals are well over 4%. This is inconsistant with the normal figures associated with slag. Ryan notes this problem and suggests that his information is incorrect and that the second set of figures must represent an assay of local ore. This thesis accepts his analysis of the situation. In accepting the first figures of 1.05% for the slag it is possible to suggest that this slag came from ore with over 1.825% (1.05+.775=1.825).
Karagol	11.01	45	The importance of the copper element (see below) suggests that it was treated in a two-step fashion with the lead being reduced to smelt the silver in the first step and the copper being removed in the second.
Şadegore	11.01	45	Same situation as at Karagol.
Şadi	83.4	46	Highest assays of lead in the region. It can be used as a pure ore and shipped without pre-treatment for use as an aid to smelting silver.
Kozköy	13.22	44	Evidence of slag heaps and ancient tunnels.
Çoçendere	3.91	46	Evidence of ancient mining reported.
Egerçan	17.34	41	
Oren	5.36	41	
Kizilelma Orûçbey	10.03	41	Assays come from two nearby outcroppings.
	1.78		
Maşat	37.61	41	
Ali Baba Maden Creek	37.61	41	
Ordu			
Karakiraz	45.44	37	Most important site in the region.
Arpalik	7.61	36	Evidence of ancient mining.
Tifi-Hoben	9.10	36	
Koruk	9.10	36	
Rize			
Latum	13.47	48	Only major deposit in the region.
	3.165		An unsubstantiated report from the files of a mining company which worked this area at the turn of the century.
Gümüşane			
Gümüşane	10.17	19	Associated with silver ore having an assay of 3.60 oz/ton. This figure is the maximum assay occurring at the −30 m. level. The average assay for the deposit from the −28 to −44 m. levels is 5.91%. Associated with the second lead deposit is the high gold assay already noted. The two assays for the lead are 3.04% and 9.48%.
Dandeşköy	72.5	20	As at Şadi, this ore is pure enough for use without further refining. These levels further enhance the silver element in the ore.
Keltepe	13.55	20	Also associated with high levels of silver.
Keltaş	83.47	20	The main other element is silver. Therefore, for smelting the silver, this ore can be considered essentially pure.
Şadiköy	19.26	52	Associated with other base metals.
Kelkaya Creek	19.26	52	Same situation as at Şadikoy.

Çatak	39.41	52	A second source nearby has an assay of 2.06% and is also associated with minimal levels of other base metals.
Kose Musa	39.41	52	
Qudul	14.69	52	
Kuru Maden	7.11		Based on an average assay from three samples.
Livine	1.935		Based on an average of four assay values.
Ertabil	1.935		Same situation as at Livine.
Kostere	8.45	55	While this assay value is based on an average of two samples, one sample produced no assay of lead while the second produced 16.9%. Since Tonan Maden is part of the same ore vein, these assumptions are also true for its results.
Tonan Maden	8.45	55	
Alaçayir	12.8	55	
Ağri			
Yk. Şeyitbey	77.0	23	The only source in the region. It is pure enough for use in a raw form. There is evidence for ancient mining of this deposit.
Çoruh			
Beglevan	5.86	50	Noted previously for its silver output.
Maden	63.29	29	Although not as high as in many cases note the high levels of silver also found there. The second assay is of a nearby deposit.
	2.93		

CHART IV

Region-*Giresun* (copper)

Site	*Assay*	*Source*	*Notes*
Yaykinlik	9.24	Ryan, p. 16	One of the higher levels in the northern region.
	1.6	39	
Paya	4.17	40	
Kizilelma	1.95	41	
Osman Kiran	2.35		An average of three samples. Evidence of ancient mining.
Karaerik	2.35		Same situation as at Osman Kiran.
Harkköy	7.49	43	While the problems of the samples from this site have been outlined when dealing with lead, the minimum levels of copper can be determined. One of the assays appears to have been from slag. This assay, if indeed from slag, allows for a suggestion that the minimum level was 1.778% (1.03+.775= 1.778). There was at least a minimum level of mining possible.
Işrail	1.59	44	This figure represents the level for the slag. An assay of the ore yielded a value of 3.36%.
Kozköy	7.96	44	The large amount of ancient slag attests to the importance and antiquity of the mining. This deposit was also a potentially important source of iron.
Karagol	3.85	45	
Şadigore	3.85	45	
Şadi	16.62	45	This deposit has been previously referred to with respect to the likely use of a two-step extraction process to exploit the lead/silver components in the ore.
Akköy	3.69	45	Nearby are two other mines which have evidence of ancient mining by the presence of large slag mounds and old tunnels. However, there are no assays known for these ores.
Kirazgoren	4.58	45	There are mounds of ancient slag nearby which attests to the antiquity of mining. The assay provides only a base level since it was taken using the floatation method. This method entails the separation of the ore from the dross in water. The

			ore is first washed to remove the lightest of the impurities. It is then crushed into a fine powder and the washing process repreated to remove other small amounts of dross. The ore is then hand separated and weighed. Only the obvious copper nuggets can be retrieved in this manner. However, it does give a quick and relatively accurate assessment of the ore.
Çoçendere	4.82	45	
Pelido	—		Evidence of ancient mining.
Girlak	—		Same situation as at Pelido.
Karabörk	5.56	46	Four sites are found in very close proximity to one another. It is therefore possible to consider this area as a single unit. While the copper assays are of medium quality, the potential quantity of the mines in this small area could have been considerable.
Dikmen	—		No assay known but evidence of ancient mining. There are numerous mine shafts and slag heaps.
Karabüldük	—		Ancient mining attested by the construction of an ancient shaft 3×3×8 m. to reach the copper ore.
Kiricak	—	40	The copper ore was reached in antiquity by the creation of a 30 m. cave tunnel and a 3 m. inclined shaft.
Çibril	—		Ancient shafts and slag heaps with copper tailings.
Karilar	—		Same situation as at Çibril.
Şeku	—		Evidence of ancient mining.
Işrail	—		Evidence of ancient mining at Işrail-Şegezlik and Işrail-Baliboz.
Inköy Demir	1.46		Associated with iron deposits.
Çoruh			
Maden	2.93	23	
Kutonit	23.8		The levels are amongst the highest in the entire frontier region.
Zebealti	23.8		Same situation as at Kutonit.
Petek	3.50	50	
Beglevan	4.23	50	
	9.23		
Çoruh	4.0	51	This is a continuous band of over 12.5 km. While the ancient miners would have only been able to exploit the veins near the surface, the potential was great.
	11.665		
	4.25		
Çorum			
Ucolik	12.0	33	The only major underground deposit in the region.
Karaavdar	—	33	Native copper deposit in nuggets.
Çorum	—	33	Same situation as at Karaavdar. Each 10 kg. nugget of pure copper is equivalent to 250 kg. of ore with a copper element of 4%.
Tokat			
Hayati	2.8	33	The only important source of copper in the region.
Ordu			
Hizarbaşi	11.76	35	This assay is enhanced because the ore has some silver.
Arpalik	2.44	36	Also has important lead/silver elements.
Karakiraz	1.60	37	The use of this copper element is open to question. This is also true for Arpalik. The main elements were, as previously noted, silver and lead. In order to exploit the copper element it is necessary to raise the furnace temperatures to much higher levels. The melting point of lead is quite low, 327°C (600°K−273=327°C) and that of silver, 957°C (1230°K). However, the melting point for copper is substantially higher, 1083°C (1356°K). Thus, it is not necessary to smelt the lead and silver elements to a high enough level to release the copper. This would have to be done as a second process. It would have meant the re-smelting of the slag to the high temperature. Although difficult, if it is assumed that under

			normal conditions the level of 1.60% copper was profitable, then the percentage of copper in the slag would have been much higher and therefore, the profitability greater.
Zevli	14.53	37	
Okçubel	14.53	37	
Trabzon			
Trabzon	—	38	
Gümüşane			
Çatak	2.18	52	
	1.57		
Kose Musa	1.57	52	
Kozköy	4.57	52	
Almacik	4.57	52	
Föl	3.566	47	This assay is based on an average of three samples.
Kalafka Hatipli	4.42	47	Ryan identifies this as a slag assay. This seems unlikely since not only is the copper assay too high, but also, the iron content is listed as being 26.13%. Since both these levels are far too high, it is likely that they are an assay of the ore.
Kustul-Armenos	1.97	47	The same problem exists as at Kalafka Hatipli. While the copper element is, by itself, possible for slag, the level of iron is 25.2%. A second sample identified as ore gives an assay of between 2 and 3%. If these figures are correct, the ancient miners were not interested in iron. This suggests that the mines were active before the use of iron and that gold or silver were the main elements. The assays do not contain any of these precious metals. Also, the slag does not contain any evidence of either of the two main oxides of copper (CuO and CuO_2). Thus it appears necessary to suggest that the assays designated as having come from slags are really from ores.
Karaçükür	1.575	53	Copper was the largest single element. Thus, eventhough the assay is low, under certain circumstances it could be profitably mined. There is evidence of ancient mining.
Çayir Çükür	3.27	53	An average of two samples. There are five ancient shafts and the slag was assayed at .80% copper.
Mt. Yalyalar	2.45	53	Remains of ancient mines.
Taşlica	12.1	54	
Deregozu Maden	12.1	54	
Kuru Maden	3.765		Based on an average of three samples.
Kostere	3.985	55	Noted for its lead deposits.
Tonan Maden	3.985	55	
Alaçayir	8.9	55	
Irha	2.33	56	Evidence of ancient mining.
Rize			
Latum	3.216	48	There are four assays from the various outcroppings, quite consistant in their values. There is a value of 2.02% copper taken from one of the slag heaps. This high level has already been noted. It is likely that these figures come from some of the ore. The zinc element in the ore is assayed at 40.0%. This is very high. Zinc has a very low smelting point (420°C) (693°K). Therefore, any smelting would have altered the zinc to create one of two oxides (ZnO and ZnO_2). Since neither are present it seems that Ryan has made a mistake. One of the assays, taken from ore which had been hand separated, yielded a figure of 17.5% copper. Similar to floating, the hand separation is quick. It involves an initial washing of the ore. It is then crushed and the nuggets removed and weighed.
Zigam	9.267	49	
Sivas			
Maden	15.0	56	

	5.645		
Golçuk	3.07	56	Evidence of ancient mining.
Handuzu	3.07	56	Similar situation as at Golçuk.
Çamilköy	5.645	56	
Karakaya Tepe	5.645	56	
Bulhat	3.71	56	
Erzincan			
Çeplar	3.26	57	An assay of 1.785% is also known for the slag.
Agamcagam	2.217	57	An average of four assay samples.
Erzurum			
Erkek	6.4	58	The only site in the region, but, given the location, on the Urartian border it is difficult not to consider it as part of the Urartian economy.

CHART V

Region-*Amasya* (iron)

Site	*Assay*	*Source*	*Notes*
Gümüşhaçiköy	15.5	Ryan, p. 10	The only site in the region to produce iron.
	9.6		
Gümüşane			
Gümüşane	17.40	20	Referred to previously with a gold assay of 51.50 oz/ton.
Çatak	6.69	52	
Şadiköy	15.49	52	
Kelkaya Creek	15.49	52	
Almacik	27.40	52	
Kozköy	27.40	52	
Gudul	12.50	52	
Gelevera	33.62	53	Ancient mines nearby but unassayed.
Livine	27.08	55	
Ertabil	27.08	55	
Egrikar	—		Although no assay values, it was worked in antiquity.
Ayibeli	—		Same situation as at Egrikar.
Beytarlaşi	—		Same situation as at Egrikar.
Absayayla	—		Same situation as at Egrikar.
Şeku	—		Same situation as at Egrikar.
Harşit	—		Same situation as at Egrikar.
Giresun			
Osman Kiran	38.35	42	
	34.61		
Karaerik	28.33	42	
Inköy Demirçiköy	25.75	43	Evidence of ancient mining.
Harkköy	26.08	43	
Işrail	37.82	44	
Kozköy	27.35	44	Ancient tunnels and slag heaps.
Şadigore	12.82	45	
Karagol	12.82	45	
Kelete-Kirazoren	11.34	45	Assayed using the float method.
Karabörk	20.12	46	
Gelevard/Ayidere	—		Signs of ancient mining, but there are no assays available.
Boynuyolŭ	—		Same situation as at Ayidere.
Karaovacik	—		Same situation as at Ayidere.
Kiran Maden Gebekilis	—		Same situation as at Ayidere.
Trabzon			
Kalafka Hatipli	26.13	47	Identified as an assay of slag. The problems of this interpretation have already been noted.

Kustul-Armenos	25.2	47	Same problems as at Kalafka Hatipli.
Abyane	—		Ancient mining, but assay values not known.
Kuçuk Ayven	—		Same situation as at Abyane.
Rize			
Latum	26.0	48	
Çimil Dağ	—		Old workings, but no assay available.
Demir Dağ	—		Same situation as at Çimil Dağ.
Çoruh			
Çoruh	23.34	50	An assay of four samples averaged together. The only iron producing site.
Sivas			
Divrigi	58.3	104	Highest assay in the northern frontier zone.
Hornavul	—		Evidence of old workings.
Erzincan			
Çopler	—		Evidence of old workings.
Ordu			
Armuteli	—		Evidence of old workings.
Ünye	16.0	Tylecote, p. 137	Iron sands.

Guest, John S. 著　*The Yezidis —— A Study in Survival*　1987年　KPI Limited (London) 刊
317ページ　50図　価25ポンド　ISBN 0-7103-0115-4

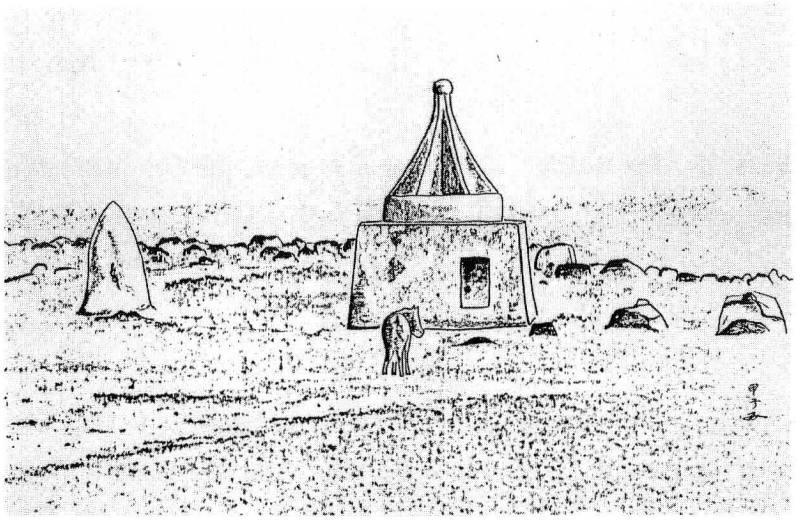
川又　正智

ヤズィーディという民族名——宗教名を知る人は日本では多くないであろう。紹介者の場合，はじめてメソポタミア調査に参加しようとしているころ，ちょうど出はじめたマイの邦訳を読みその中でこの民族を知った。マイの本は単に冒険小説としてもおもしろいが，19世紀後半ヨーロッパ人のオスマン帝国像やヨーロッパ・キリスト教布教への反省などをかんがえるにも興味ふかいものである。マイが異常ともいえる好意と称讃をもってこの人々ををえがいているのが妙に頭にのこった。後でマイの材料が主にレアードらしいことに気づいたし，偶然自身でヤズィーディの村ジガーンに住んで発掘する機会も得た（発掘概報は井・川又「ラーフィダーンⅥ」；村の生活については第23回クリルタイで川又紹介)。しかし住んでみたが語学力の不足と，政治上の事情からも民俗調査のまねごともできず，一方関係文献もフィールドの著作以外はくわしいものもみることができないまま，ずっとこの人々のことをかんがえていて，本書の刊行を知った。著者は米国の実業家で，本来は英人。軍役のためこの地域に関係しはじめ，後にドイツやトルコのヤズィーディ集落をおとづれるようになり，この初の単独ヤズィーディ史書をあらわすにいたった。

ヤズィーディとはイラク・クルディスターン——特にモースル北方シェイハン地方と西方シンジャール地方——を中心に，他に本書によるとトルコ，ソ連，シリア，西ドイツ；ジガーンのハッジ・ラシード氏によるとレバノンにも——住み，クルド語ケルマンジー方言をはなし，特に独自な宗教によって区別される集団である。イランにも居るともきいている。宗教上はザルトシュトやイスラーム・スーフィー，ネストリウスなどの混合とよくいわれているが，目だつ特色は，堕ちた天使——シャイターンがいずれまた天使の長として神の傍に復職するというにある。したがって悪魔に対する態度に他とことなるものがある。周囲からは誤解と偏見により悪魔教徒とか悪魔崇拝者とよばれるほど。習俗では植物食タブーを持つのがめずらしい。全人口は15万ほどと推定され，その中約三分の二はイラクに住み，定着農耕民がおおい。

本書は12世紀の開祖シェイフ・アディ以来現代までの歴史をたどり，オスマン時代に多くをさく。現代の民俗についてはそうくわしくない。アディの生涯や教義のこと，ヤズィーディの名の由来，ヨーロッパ人との出会もくわしく書かれている。民族の自称はダーシンだといわれることもあるが，本書によるとそれはヤズィーディの中の有力部族の名であるという。資料としては，彼ら自身の文献史料は少ないのだが，政府公文書（英仏土ヴァティカン）やキリスト教ミッションの記録（特に米国)，西アジア諸語の出版物等を多数利用していて，文献目録もくわしい。経典の英訳も付されている。その起源を民族的にはハッカリ・クルドとし，宗教的には主にイスラームから出てきたとしている。西アジアのキリスト教やヨーロッパのキリスト教との関係についてもくわしい。日本人のヨーロッパ経由のユダヤ・キリスト・イスラーム観をあらためるにも役立つところがあろう。

所謂少数民族なのであるが，クルドの支族とかんがえれば，この地方ではむしろ多数派の民族であることになる。しかし紹介者がシェイハン地方で感じたところでは，彼等自身クルドへのつよい対抗意識をもっているようで，クルド対アラブの問題においては，親アラブとも言い得る。このあたりではクルドが第一に多かったので，ムスリムのクルドに圧迫迫害されてきたからであろうか。帰属意識としてはクルドとはまったく別だとおもっているようであった。その歴史は迫害



ヤズィーディ墓地小堂（イラク，ムシャリファ村）

受難の歴史で，副題に survival の語がある所以である。なお NHK シルクロード・イラク篇でクルドの春のダンスとして放映されたのは，実はヤズィーディのダンスであった。

少数民族なる存在は昔もあったであろう。むしろ太古にはみなそうであったかもしれない――その場合，少数民族という名は不要となるが。文化というものが時を経るにつれ多様化してきたのか統一化してきたのか（たとえばバベルの塔の話では，みなひとつであったとかんがえているわけである）。そして今よりも物の差違はおおきかったかどうか。政治経済は統一が大きくなってくるのが歴史のながれで，文化全体もそうなると一般にはかんがえられている。今，北メソポタミアは多民族混在地だが，村ごとに差異のない物もあり，差異のあるものも有り，一村のなかだけでみても同様である。発掘でこういう問題はどこまでわかるものなのだろうか。

発掘する者は過去をさぐるため地下を掘るが，そのテル上に現在居住する人々との間にもわすれがたい想ができるものである。特にヤズィーディはレアードたち初期の発掘者の記録によく登場する人々で，学史上もわすれられない。少数民族という言葉にある種のロマンを感ずる人もあるようだが，この民族は特に謎めいた印象がつよかったようだ。紹介者にとっては，本書がジガーンに行く前にあったら，と今おもう。ともかく彼らとの友情はわすれない。

本書の章題は次のようである：

Chapter 1　Antecedents
Chapter 2　Sheikh Adi and His Order
Chapter 3　The Yezidi Religion
Chapter 4　Early Encounters with the Outside World
Chapter 5　Prisoners on a Sinking Ship
Chapter 6　English-speaking Missionaries and Explorers
Chapter 7　Rassam and Layard
Chapter 8　The Tribulations of Mir Hussein Beg
Chapter 9　Abdul Hamid and the Yezidis
Chapter 10　The Publication of the Sacred Books
Chapter 11　Brother and Sister
Chapter 12　The Epoch of Mayan Khatun
Chapter 13　The Yezidis in Transcaucasia
Epilogue
Appendix I　The Yezidi Sacred Books and Sheikh Adi's Hymn
Appendix II　Texts of the Yezidi Letters to the Grand Vizier and Sir Stratford Canning

〔丁卯十月記〕

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研究所彙報

国士舘大学イラク古代文化研究所の活動 —1987年—

1月　沼本宏俊，エスキ・モースル地域の発掘調査（総括）のためイラク現地で調査。

3月　藤井秀夫，ユネスコ地域センター（バグダッド）において，アッタール出土織物の保存に関して講演。

3月　大沼克彦，ロンドン大学における「中近東のオーリャック文化の起源」に関するシンポジウムほかに参加，発表。

4月　川又正智，大沼克彦を国士舘大学助教授に発令。

4月　小口裕通，昨年に引き続きマンチェスター大学大学院に留学中。

6月　小口和美，マンチェスター大学大学院に留学のため渡英。

9月　川又正智，本学教養部へ異動。

9月　松本　健，「メソポタミアにおける前二千年紀の考古学的研究（海外学術研究—大学間協力研究）」のため渡独（のち藤井秀夫，小口裕通，小口和美が合流）。

10月　ムアヤッド S. B. ダメルジ著，高世富夫・岡田保良編訳『メソポタミア建築序説—門と扉の建築術—』，*THE DEVELOPMENT of THE ARCHITECTURE of DOORS and GATES in ANCIENT MESOPOTAMIA*，の和・英訳2書を刊行。

11月　イラク西南砂漠遺跡（アイン・シャーイア，ドゥカキン）第2次発掘調査開始。主たる経費は本学，日本私学振興財団，および民間財団の助成金による。派遣出張者：藤井秀夫，大沼克彦，岡田保良，松本　健（以上本研究所），川又正智（本学教養部）。

11月　藤井秀夫，ブリティッシュアカデミーの招聘教授として渡英。ケンブリッジ，オックスフォード，ロンドン，マンチェスター大学などで講演。

ニュース

アイン・シャーイア地区の遺跡群は，イスラム教シーア派の聖地として知られるナジャフ市の西約15 kmに位置し，バハル・アン・ナジャフ湖の湖岸に沿った崖線沿いにある。遺跡の分布はおよそ700×1500 mで，ここではアッタール地区同様に多くの洞窟が掘削され，外壁をもつ建物，焼成煉瓦造の建物，窯状施設？，カナート（地下水路）などが狭い範囲に集中する。1986年度は全体の地形図や，遺跡の分布図を作成し，このうちの外壁をもつ建物と，カナートを選んで発掘した。

建物の外壁は長辺160 m，短辺60 mの矩形で，日干煉瓦造になる。調査は3×20 mの狭い範囲に留まる。外壁厚は3 mで，壁の外側は浅い溝状のくぼみとなる。壁内では壁に接して石膏で上塗りした長さ10 m以上の部屋（室1）と，径1.2～1.5 mの円形のテンノール2個を伴う部屋（室2）を検出した。遺物は土器，彩釉陶器，ガラス器などであるが，注目されるものとして，室1からは頸部に十字形の線刻をもつ大形甕が出土した。これは，この付近に居住していたとされるキリスト教徒との関係を示唆しているのかもしれない。建物の年代はイスラム初期に伴う可能性が強い。

カナートは，当間隔に配された5箇所の竪穴（径1.5～2，深さ2～3 m）と，これを地下で連結するトンネル状横穴からなる。今回の調査では全体の範囲や，掘削の時期は明らかにできなかった。しかし，イラン式カナートの発見は重要といえよう。

1987年度は上記遺構の継続調査と，ドゥカキン洞窟の発掘を予定している。

（H・N）

『ラーフィダーン』編集方針

研究所の紀要ですが，外部の投稿希望の方にも広く誌上を開放し，学術の進展に寄与したいと思います。投稿資格は問いません。年１回発行を原則とし，原稿の採否と掲載方法は編集委員会（委員長：所長）が決定します。

投稿規程

1. 古代西アジアの研究およびそれに関連する諸分野を掲載対象とします。
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7. 注は原則として本文末に集中して掲載します。単なる引用文献は注とせず，執筆要項11の要領で本文に示してください。
8. 採否にかかわらず，投稿原稿は返却いたしません。必要なものは投稿前にコピーをとってください。
9. 他言語レジュメ希望の場合は，投稿者において作成の上，原稿と共に送ってください。
10. 英文目次をつけますので，論題には英訳をつけてください。英文原稿の論題には日本語訳をつけてください。
11. 掲載となっても原稿料はさしあげません。発行後は本誌２部と別刷50部まで無料でさしあげます。
12. 投稿は随時受け付けますが，その年の巻の締切は９月末日とします。
13. 原稿の送付先，連絡先はつぎのとおりです。

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執筆要項（日本語の場合）

1. 原稿用紙は，横書きのものとします。本誌用原稿用紙を準備してありますので御注文下さい。
2. 原稿は，青または黒のペン書きとします。鉛筆書きはうけつけません。楷書がきを守ってください。
3. 古典の引用，固有名詞など特殊な場合をのぞき，現代かなづかい，当用漢字を用いることを原則とします。
4. 句読点，括弧，各種記号も，かならず原稿用紙のマスの一箇分を使うこととします。
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6. 原稿の第一ページ（表紙）には，本文を書かずに，論題（タイトル）と著者の住所，所属，生年，英訳論題だけを書いてください。
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10. 写真も，図，表のあつかいにならい，通し番号，挿入箇所の指定をおこなってください。また，か

ならず写真の説明をつけてください。写真，図表が引用の場合は次項にならってください。

11. 引用文献の指示は，本文中に，大括弧を付し，著者名，文献刊行年次，引用ページ数の順序で下記の例にしたがって記載することとします。
〔松井，1960：pp. 30-32〕〔大岡，1980：Fig.15；小沼，1981：Pl. 16〕
〔Naharagha, 1943：p. 123〕
ただし同一著者による同年次刊行物の場合はアルファベットを付加して下記のように記載してください。
〔松井，1963a：pp. 20-22〕〔松井，1963b：p. 10〕
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例） 論文の場合
Mallowan, M. E. L., 1947, "Excavations at Brak and Chagar Bazar" Iraq Vol. 9, London
川村喜一，1963，「シュメール早期の社会」『オリエント』Vol. 6-No. 4, 日本オリエント学会
単行本の場合
Stein, Aurel, 1940, Old Routes of Western Īrān, London
水野清一，1962，『ハイバクとカシュミル・スマスト』，京都大学
14. 章を立てる場合の見出はⅠ，Ⅱ，Ⅲ，以下大見出1，2，3，中見出(1)，(2)，(3)，小見出ⅰ，ⅱ，ⅲ，と数字を使ってください。
15. 校正は原則として初校を著者校正とします。その際の加除筆はみとめません。

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1. The manuscript should be typed on one side only of A–4 size paper.
2. On the front page, to the exclusion of the text, the title of article should be writen as well as the name, address, position and birth year of author(s).
3. Be sure to prepare figures, tables, maps, etc. on separate pages and compile them separately from the text. Each figure, table, etc. should contain its source, explanation and consecutive number. In addition, designate on the margin of the text where each figure, table, etc. should be inserted.
4. The drawings should be inked over. In general, photo typesetting of letters, numbers, etc. will be done by the editorial board.
5. In principle, monochrome photographs, clearly printed larger than 12×8 cm, are acceptable, but not negative films.
6. As already required in the handling of figures, tables, maps, etc., photographs shall require explanations, consecutive numbers, designations for insertion into the text.
7. Below are the examples of references; the writer's name, publication year of the literature, and quoted pages are arranged in order, enclosed in brackets among the text:

   〔Childe, 1956: pp. 30–32〕〔Alnahar, 1943: p. 123; Agha, 1946: p. 517〕

   If those of the same writer are published in the same year, classify them by alphabet: 〔Hamada, 1963a: pp. 20–22〕〔Hamada, 1963b: p. 10〕
8. Notes should be written on a separate paper from the text. Be sure to give a number to the notes in the text.
9. Put all the references that have been quoted in the text and the notes at the end of article paper, and write them as follow: (1) The writers' names, mentioned in the references, are to be listed in alphabetical order. The names of Japanese, Arabs, etc. must be arranged among the European names based on the supposition of their having been rewritten in Latin; (2) The writer's name, issue year, title, volum name, volume number, issue number, publisher's name (place) are to be filled in the references in regular sequence. The title of journals, publications of collected articles, or books of an independent volume are underlined for the necessity of their being printed in Italics. The journal's number and issue number is displayed by an arabic numeral (e.g. Vol. 5).

   Article in journal:

   Mallowan, M. E. L., 1947, "Excavations at Brak and Chager Bazar" Iraq Vol. 9, London.

   Book:

   Stein, Aurel, 1940, Old Routes of Western Īrān, London.
10. Headings, such as Chapters, are to be preceded by I, II, III; major sections, 1, 2, 3; subsections, (1), (2), (3); minor divisions, i, ii, iii.
11. As a rule, proof reading shall be done by the original author. However, no permission shall be granted to alter the original manuscript.

正　誤　表　CORRIGENDA

(Vol. VII)

	誤　errors	正　corrections
文献略記表 Abbreviations	B.S.P.E.	B.S.P.F.
p. 76　ℓ. 26	Movious, H. L. (Jr).	Movius, H. L. (Jr).
p. 95　ℓ. 2	Sclected Sayings	Selected Sayings

編集後記

年1巻の出版目標をたて，8巻目にして変則的ながら当初の目的を達成できた。すでに投稿原稿を準備中の方もおられようが，今回は，3月中に出版を完了せねばならない事情による。その点を了解願いたい。以降，新たな気持ちで，桜の花の咲くころの刊行を継続したい，と考えている。

研究所が設立されて12年が過ぎた。発足当時からのメンバーで，本誌刊行の礎を築き，出版に努力された川又正智助教授が，教養部へ転属となった。当研究所は，多くの現地調査を行ってきたが，その間の諸雑務等は専ら氏にお願いした。とくにハムリンの調査は氏の激務によって支えられた，といっても過言ではない。真摯な研究態度，雑学の進め，現地調査での方法，研究者のロマンなど多くを教えられた。かく考えるのは編者一人ではないだろう。心から感謝を表するとともに，今後も指導をお願いしたい。

イラク・イラン戦争は果てしない泥沼の様相を呈している。戦争の終結が叫ばれて久しいが，停戦の気運は熟していない。当研究所はこの間もハディーサ，エスキ・モースル，ナジャフ地区で発掘調査を遂行してきた。これらは幸いにも戦場から離れていた。しかし，戦争に伴う困難は否定できない。また，共に調査をおこなってきたイラク考古庁の調査官や，元作業員の訃報を聞くにつけ，心がいたむ。一日も早い終結を望んでいる。

(井)

今回は，マンチェスター大学のデビッド・スラッタリー氏より，論文の投稿をいただいた。氏はウラルトゥを中心に研究する若手の学者で，掲載のものはマンチェスター大学に提出した博士論文の一部であるという。また，掲載の要旨は同大学に留学中の小口裕通氏の訳によるものである。

(沼本)

ラーフィダーン　第VIII巻　1987

1987年（昭和62年）12月31日発行

編集発行　国士舘大学イラク古代文化研究所

東京都町田市広袴844

印刷製本　大学印刷株式会社

広島市中区十日市町2丁目1-15

الرافدان

AL-RĀFIDĀN

JOURNAL OF WESTERN ASIATIC STUDIES
VOLUME VIII 1987

THE INSTITUTE FOR CULTURAL STUDIES OF ANCIENT IRAQ
KOKUSHIKAN UNIVERSITY
Tōkyō