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SOUTHERN CYPRUS IN THE LATE BRONZE AGE: A REGIONAL PERSPECTIVE

The aim of this article is to provoke discussion concerning interactions between sites in southern Cyprus during the Late Cypriot (LC) period; emphasis will be given to the LC II and III periods. More precisely, there will be an effort to:

i) Define a region in southern Cyprus.
ii) Adopt a model that might describe the nature of interactions between sites within the region.

1. THE SOUTHERN REGION: SOUTHERN PLAINS AND RIVER VALLEYS (MAP 1)

A distinctive region can be defined on southern Cyprus in the Late Bronze Age. It includes the major portion of the modern districts of Larnaca, Limassol and Paphos, with Cape Pyla being its eastern and Paphos its western boundaries. The whole region is characterized by a discontinuous series of small plains, with the coastline repeatedly broken by numerous rivers: the Tremithios, Pouzis, Xeropotamos, Pendaskinos, Maroni, Vasilikos, Garyllis, Kourris, Khapotami, Dhiarrizos and Ezuza; these rivers drain the Troodos Range, which occupies the greater part of western Cyprus, on this side of the island. On geological grounds, this region can be treated together with the Chalk Plateaus of southern Cyprus.

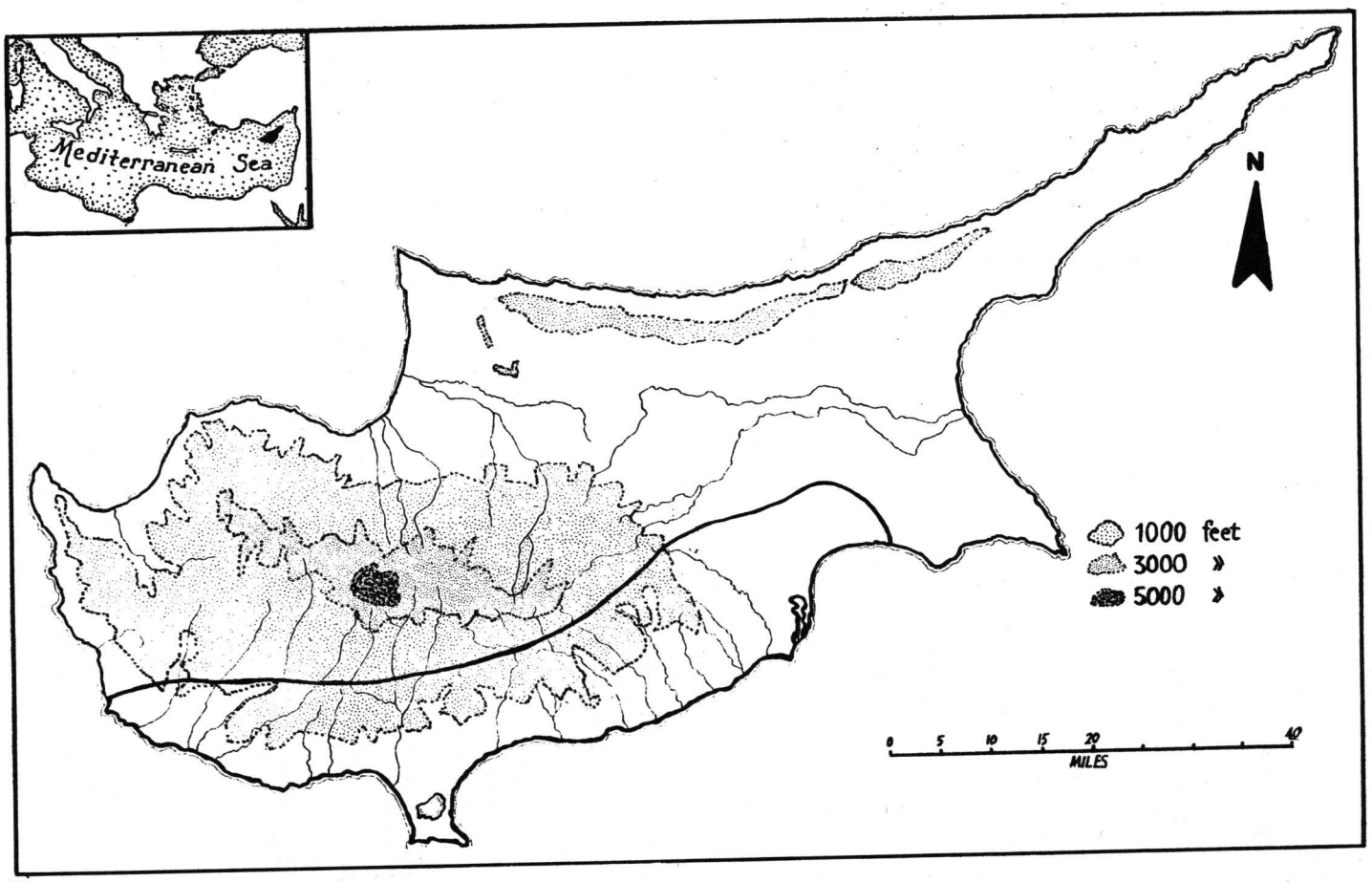
There are four criteria for defining this region: The geophysical, the geological, the number of settlements and/or cemeteries in the region during the LC period, and the number of harbors on its coast during the same period.

The Geophysical Criterion

It has already been noted that the region forms a distinct drainage unit. Its topography is of a low gentle dip-slope that descends gradually to the sea; this slope ends either in raised beaches or in narrow coastal plains. The plateaus are cut through by several canyon-like river valleys. Such a unique geophysical environment had important implications for the survival of settlements in the region.

The Geological Criterion

The region coincides with the Chalk Plateaus in Cyprus. This regional characteristic is unique on the island, and it is, therefore, a practical and useful feature for regional classification. Numerous small springs on chalk formations seem to be of vital importance to the sites in the region.



Map. 1. Cyprus within the Eastern Mediterranean.

Number of Settlements and/or Cemeteries in the Late Bronze Age (Tables 1 and 2)

A rather important change in the settlement pattern characterizes the southern region of Cyprus in the LC period.[1] There were more than three times as many sites as there had been in the Middle Cypriot period. A numerical increase in sites can also be seen elsewhere in Cyprus, but not to the same degree as in southern Cyprus. Also, the sequence of change in the number of sites in southern Cyprus throughout the entire Cypriot Bronze Age (Early, Middle, Late) differs from that which occurs in the rest of the island (Figs 1 and 2). This is an important feature that helps in defining the southern region of the island.

Period		
Early Cypriot	S	9
	C	22
Middle Cypriot	S	6
	C	10
Late Cypriot	S	18
	C	33

Table 1: Bronze Age settlements (S) and cemeteries (C) in the southern region.

Period		
Early Cypriot	S	51
	C	75
Middle Cypriot	S	63
	C	88
Late Cypriot	S	99
	C	88

Table 2: Bronze Age settlements (S) and cemeteries (C) in the rest of Cyprus.

Harbor-Settlements on the Coastline

It seems that the southern region of Cyprus is characterized by a very high proportion of the wealthiest sites on the island during the LC period.[2] Such wealth and importance cannot be considered a result of agricultural activities. There is evidence indicating that such sites on the coast were associated with harbors.[3] Trade, therefore, with the Aegean and the Near East seems to account for the wealth found in the region. On the other hand, these harbors probably played an important role in the communication by sea between sites in the region and other sites of Cyprus, as long as the southern and northern mountain ranges prevented such communication.

1. H.W. Catling, 'Patterns of Settlement in Bronze Age Cyprus', *OpAth* IV (1963), 142; K. Nicolaou, *The Historical Topography of Kition (SIMA* XLIII) (Göteborg, 1976); P. Åström, 'Dromolaxia, Locality 'Trypes'', *RDAC* (1977), 110-112.

2. H.W. Catling, *Cypriot Bronzework in the Mycenaean World* (Oxford, 1964), 17.

3. N.P. Stanley Price, *Early Prehistoric Settlement in Cyprus 6500-3000 B.C. (BAR, International Series),* 65 (Oxford, 1979), 81; Cf. P. Åström, U. Öbrink *et al.,* in *SIMA* XLV: 1, 2, 3, 4, 5, 6 and 7.

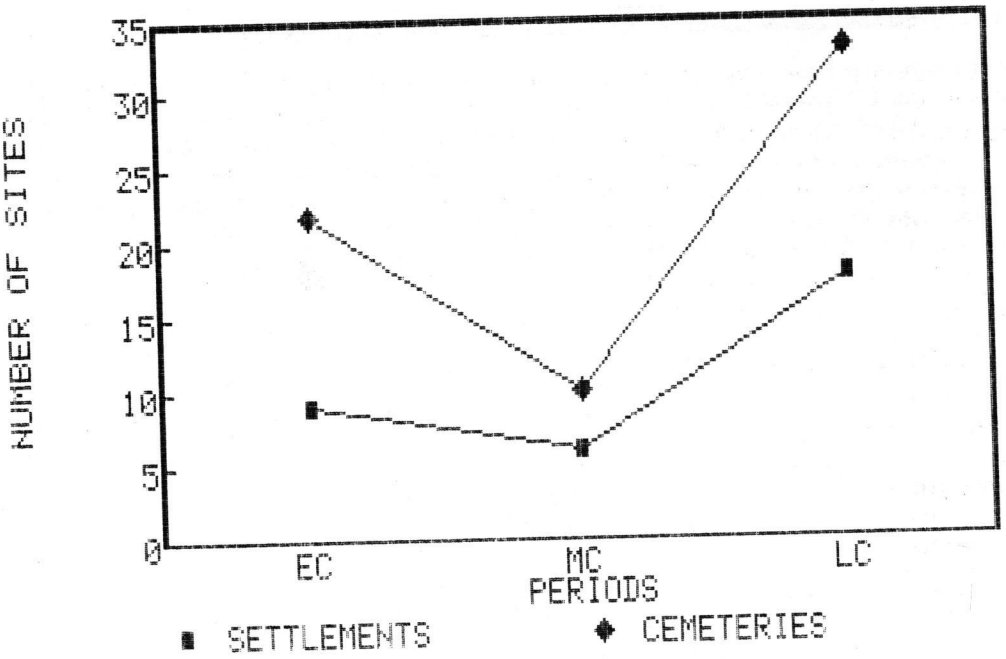


Fig. 1. BA sites in southern region.

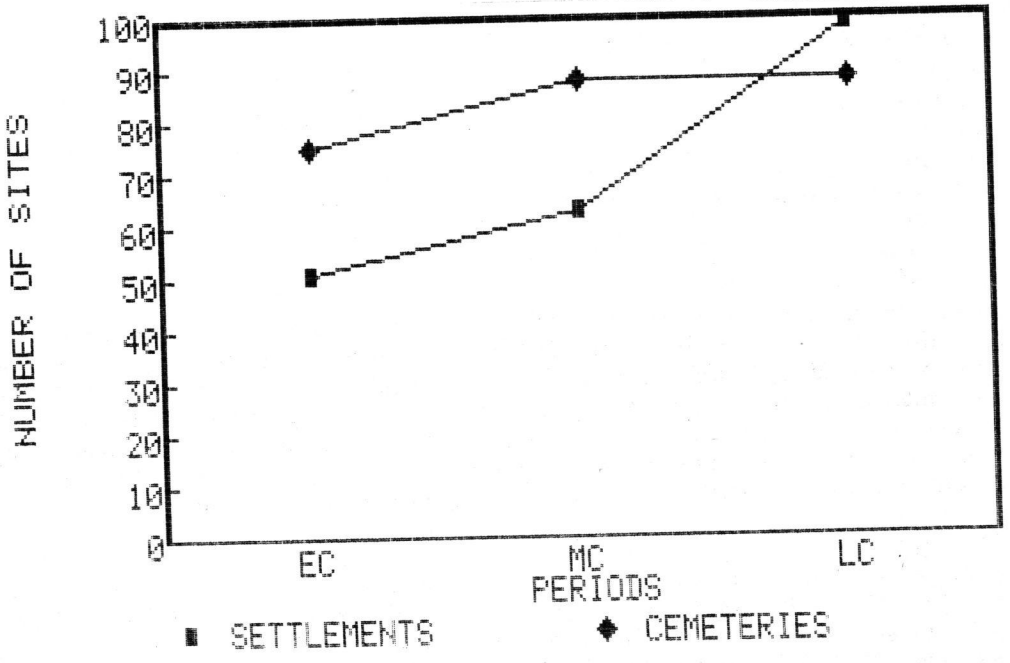


Fig. 2. BA sites in rest Cyprus.

2. THE DISTRIBUTION OF SETTLEMENTS IN THE REGION (MAP 2)

It has already been stated that a tremendous increase in the number of settlements characterizes the southern region in the LC period. The settlements are distributed in a pattern of distinct clusters, each cluster including a wealthy harbor-settlement on the coast. Such a cluster or group of settlements can be found at the modern village of Pyla, another one around Kition at modern Larnaca, and a third one at Hala Sultan Tekke on the Larnaca Salt Lakes, where, at that time, there was an open inlet and a fine harbor; this harbor was actually the finest one in Bronze Age Cyprus.[4] Such harbors can also be documented in other clusters of settlements already mentioned, with Dhekelia for the Pyla group and Kition for the Kition one.[5]

Further west a cluster of settlements occupies the area around Maroni, on the west bank of the Pendaskinos River. The relatively high number of early Aegean imports which has been found in its cemetery suggests that the site attracted much of the trade with the West,[6] so that a harbor probably functioned there in the same way as the ones at Hala Sultan Tekke, Kition and elsewhere in the region. Another concentration of important sites in the region is on both sides of the Kourris River; the Episkopi settlement is on the west bank, whereas the Erimi group is on the east. The last cluster of settlements is around Kouklia (Palaipaphos), whereas a substantial gap with much inhospitable coast-line extends from the Episkopi to the Kouklia groups of settlements. In the last two, harbors may have existed in the same manner as in the other clusters in the region.

The harbor-settlements occupied prominent positions within all these clusters of settlements; this is obvious considering the wealth of their graves, their function as industrial cities engaged in copper refining and production of bronze-work, and the evidence of literacy. Where harbors cannot easily be identified or located, river mouths were well suited to the needs of shipping. Such river mouths can be found at Kivisil on the Pouzis River, Erimi and Episkopi on the Kouris, and Kouklia on the Dhiarrizos. The harbor-settlements obviously provided communication with foreign regions, thus promoting trade between the southern region, the Aegean, Asia Minor, Syria-Palestine and Egypt.

The rivers in the region were probably vitally related to some of the clusters of settlements. This can easily be explained considering the importance of water supply to the survival of settlements. It is likely that some of them depended exclusively on agriculture. It is also possible that other such groups of settlemens existed near other rivers in the region, but they have not as yet been located.

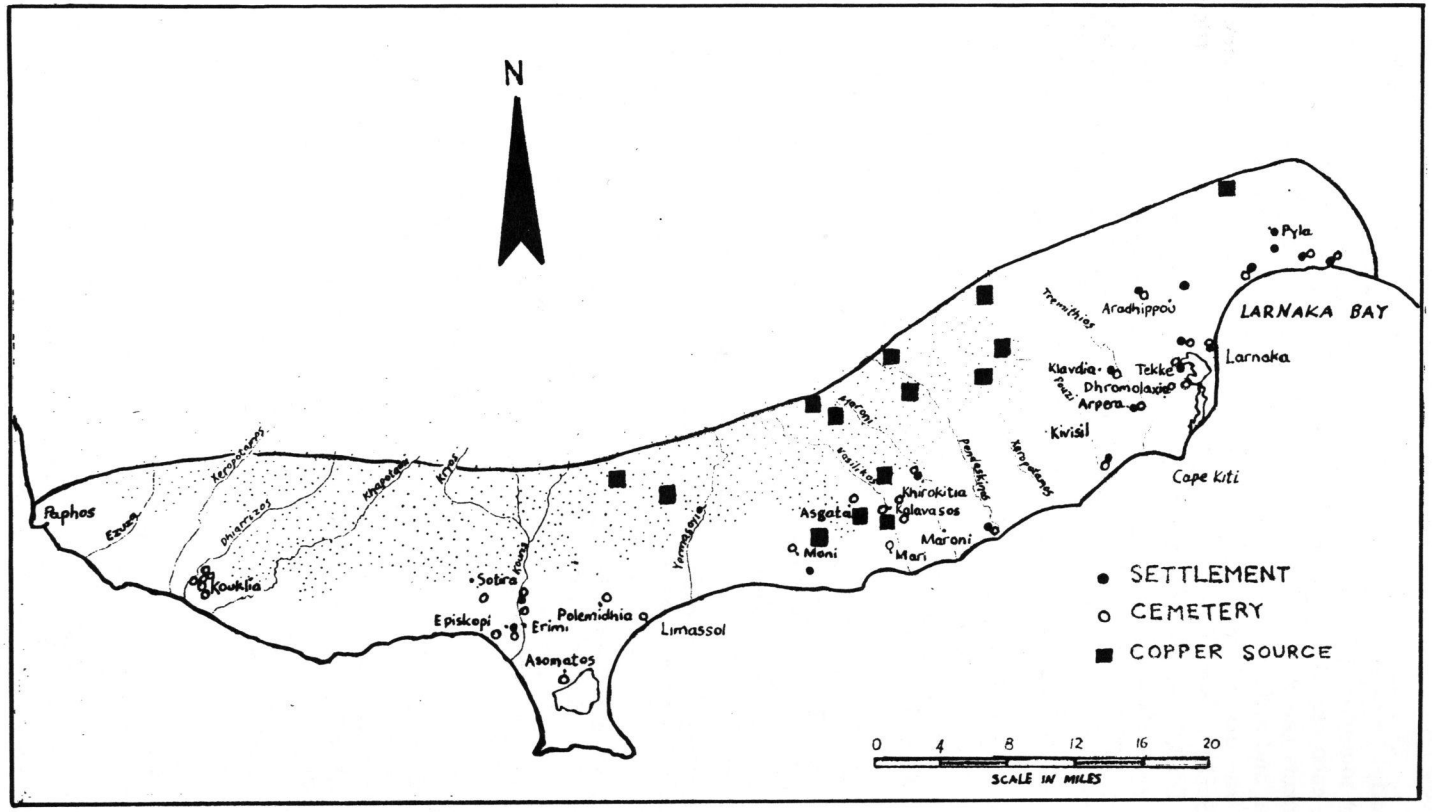
Harbor-settlements such as Dhekelia, Kition, Hala Sultan Tekke etc., especially their cemeteries, offer an excellent idea of their material prosperity and the tremendous number of material goods imported from abroad. Mycenaean trade is very well documented in this region, judging from the Mycenaean pottery and other artifacts found at Pyla, Kition, Hala Sultan Tekke, Arpera, Maroni, Aradhippou, Klavdhia, Kivisil, Kalavassos, Kouklia and elsewhere; in other words, at almost all the LC sites in the region.[7] Such imported Mycenaean material was obviously

4. Catling (*supra* n. 1), 136, 142.

5. Price (*supra* n. 3), 81.

6. Catling (*supra* n. 1), 143; J. Johnson, *Maroni de Chypre (SIMA* LIX) (Göteborg, 1980).

7. P. Åström in *SCE* IV: 1C, 289-414; H.W. Catling, *Cyprus in the Noelithic and Bronze Age Periods* (*CAH* 1966), 56; A. Wace and C. Blegen in *Klio* 32 (1939), 131-147; S. Immerwahr, in *Archaeology* 13:1, 4 ff.; Cf. *Acts of the International Archaeological Symposium 'The Mycenaeans in the Eastern Mediterranean', Nicosia 27th March - 2nd April 1972* (Nicosia, 1973); V. Karageorghis and M. Demas, in *RDAC* (1981), 135-141; Y. Lynn Holmes, 'The Foreign Trade of Cyprus during the Late



Map. 2. The Southern Reigion.

distributed to the various sites within each cluster of settlements via the major harbor-settlements on the coast. Even in those cases where we would attribute the existence of Mycenaean artifacts to the existence of Mycenaean colonies, such colonies would be identical with the harbor-settlements on the coast; therefore, the distribution of Mycenaean artifacts would follow the same direction, i.e. from the major harbor-settlements to the other sites within each cluster.

3. THE MYCENAEAN PRESENCE IN THE REGION

The Mycenaean expansion in the Eastern Mediterranean found Cyprus occupying a strategic position in the sea routes between Greece and the Near East. This forced the Mycenaeans as early as the fourteenth century B.C. to establish trading posts on Cyprus that facilitated their commercial interactions with the Near East. But, in the mean time, something equally important forced them to pay more attention to the island, colonize it, and finally achieve complete control over all its territory. It was their finding that Cyprus was one of the most important copper sources in the Eastern Mediterranean. It is easily understood that the exploitation of copper in Cyprus was quite important to the Mycenaeans. But it is also important to us in explaining the observed increase of settlements and their distribution in the southern region during this period.

A new type of economy emerged in Cyprus based on the new subsistence that resulted from the Mycenaean exploitation of copper. Most of the copper sources are found in the southern region. The new economic system caused an increase of population in the region and favored a new system of distribution of the settlements that aimed to facilitate the Mycenaean exploitation of the copper resources. In other words, the distribution of settlements in the southern region in the Late Cypriot II and III periods reflects the complete economic and political control of the region, and consequently of Cyprus, by the Mycenaeans.

4. COPPER RESOURCES IN THE REGION

Copper mining and smelting seem likely to have been responsible in part for the increase in number and wealth of the settlements in the southern region. A number of LC settlements were located near copper resources. Though it has not as yet been tested whether some of these mining places go back to the Late Bronze Age, it seems likely that the economy of sites in the region was based upon copper mining and smelting. They were actually placed on lines of communication with the rich industrial centers on the coast, so that raw material produced by them could be dispatched to those centers.[8] An argument might be raised of the possibility that imported copper ore was smelted at Cypriot sites. Taking into consideration the generally accepted main reason for the importance of Cyprus in the LC period, which derives from the fact that Cyprus itself was a main source of copper in the Eastern Mediterranean, such an argument would not seem to be reasonable.

Copper-bearing ores have a limited distribution in the southern region. They occur at Troulli, and are thus a source for the industrial sites at the Larnaca Bay; at the areas of the modern villages Sha, Kornos, Pano Lefkara and Ora; at Khirokitia, Kalavassos, Monagroulli, Mathikoloni etc.. On the other hand, finds of slags at Kition, Hala Sultan Tekke, Arpera, Klavdhia, Maroni,

Bronze Age', in *The Archaeology of Cyprus: Recent Developments* (Ed. N. Robertson) (New Jersey, 1975), 90-110; see also V. Karageorghis and J. D. Muhly (eds), *Cyprus at the close of the Late Bronze Age* (Nicosia, 1984).

8. Catling (*supra* n. 7), 51; Y. Lynn Holmes (*supra* n. 7), 91.

Kalavassos, Mari, Moni etc. make it certain that ore was mined, whereas finds of industrial equipment at Hala Sultan Tekke, Kition and other harbor-settlements show that it was smelted and made into manufactured goods.[9] The copper industrial sites scattered in the region created a kind of economy based on copper mining on the one hand, and smelting and manufacturing of metal objects on the other. Such objects, in addition to being consumed locally, were exported via the major harbor-settlements on the coast; raw copper was probably exported as well.

5. INTRAREGIONAL INTERACTIONS

The flow of raw copper and copper artifacts, as well as of imported pottery and artifacts, might give us an idea of the nature of interactions between sites in the southern region. It seems likely that a certain pattern-model of interactions recurs in each cluster of sites, where the harbor-settlements on the coast can be classified as high-order centers, and the remaining sites within each group as lower-order centers.

Low-order centers were probably responsible for partly processing the ore either in the areas where it was mined or within the sites themselves; the refining, manufacturing, and sometimes smelting took place in the large industrial cities, i.e. the high-order centers. Such an arrangement had obviously both economic and political implications. Tin-bronze, on the other hand, was widely used in Cyprus throughout the Late Bronze Age. However, there is no evidence of sources of tin being exploited.[10] Since such sources most likely do not exist in Cyprus, it seems reasonable to assume that tin was imported to the island at that time. Therefore, the high-order centers, serving also as harbors, had the supply of tin under their control. The immediate consequence of this fact was that these centers themselves provided the industrial units for the final stages of copper refining, smelting and manufacturing. In this way raw copper moved from the low-order centers to the higher-order ones. Agricultural goods may possibly have moved in the same direction, i.e. away from low-order centers that were agricultural centers as well. In other words, it seems likely that there was a flow of goods towards the central sites.

Imported pottery and other artifacts obviously moved in the opposite direction, so that this material was distributed by the high-order centers to the lower-order ones. This directional distribution was obviously prompted by the fact that this material was imported via the harbors of the high-order centers; its distribution, therefore, was controlled by those centers.

The organization and interaction of the settlements of each cluster seem to follow models based on the Central-Place Theory.[11] The high-order centers developed hexagonal lattices of secondary centers. The basic assumptions such as (i) uniform terrain and resource distribution, (ii) equal transport facility in all directions, and (iii) all central places that perform the same functions and serve areas of the same size, the most economical spacing of them would be equidistant, resulting in hexagonal patterns or 'lattices', can be observed in our particular case. It is true, however, that no archaeological area can completely satisfy these assumptions. Therefore, though the principles remain the same, particular modifications have to be made, depending on the character of each case. Though all central-place systems require low-order centers that nest within the hinterlands of higher-order ones to be placed following a hexagonal pattern, the observed data will never have

9. Catling (*supra* n. 2), 21; cf. E. Herscher in *RDAC* (1980), 18-20; R. S. Merrillees in *RDAC* (1982), 244-251; J.D. Muhly, R. Maddin and V. Karageorghis, *Early Metallurry in Cyprus 4000-500 B.C., Acta of the International Archaeological Symposium* (Larnaca 1981).

10. Catling (*supra* n. 7), 71.

11. W. Christaller, *Die Zentralen Orte in Süddeutschland* (Jena, 1933).

the geometrical regularity of the ideal model. It is appropriate in such cases to select the ideal model that seems to be the most similar to the real world pattern.

The pattern that the sites in the southern region repeat in each cluster of settlements is determined by the flow of copper and imported artifacts (Fig. 3). Without considering the role that a Mycenaean power based outside the system could play, this pattern seems to agree with the K=7 model, which is Christaller's Administrative Principle (Fig. 4:a). This model is designed for the benefit of the ruling elite rather than of the small producer (in the case of copper) or consumer (in the case of Mycenaean artifacts). It is bounded or circumscribed, with the low-order centers located within the hinterland of a single higher order center in the center of the hexagon. Transactions are direct between the major center and the peripheral secondary ones. Each high-order center controls the lower-order ones and hinterland exclusively, with minimal competition between major centers regarding low-order ones.[12] Therefore, as Smith noted, 'this system seems to be the most efficient in dividing up discreet political-administrative units.'[13] On the other hand, considering the economic nature of our data, as well as the existence of a Mycenaean power based outside the system, the relationship of the low-order centers to the higher-order ones could follow a kind of dendritic pattern, based on commodity flow (Fig. 4: b). Actually, it is usually difficult to find distinctive differences between such a system and a K=7 one. Neither concentration of political and economic power, on the one hand, nor control of information on the other allow competition within the hinterland, whereas the high-order center is in a monopoly position; also, the dendritic system suggests an international market elite (Mycenaean) based outside the system.[14]

6. THE KITION EXAMPLE

Larnaca Bay, and particularly the LC sites around Kition, illustrate the pattern of intraregional relations within the southern region. The most important LC sites in the area are Steno, Koukkouphoudhkia, Stavros, Verghin, Kokkinokremmos and Pyla forming one cluster; Shemishin, Kophinarka, Laxia tou Riou and Kition forming another; and Trypes, Hala Sultan Tekke, Tremithos (Klavdhia) and Arpera yet another. Mycenaean artifacts, especially pottery, have been found in large numbers at all these sites.[15] The harbor-settlements on the coast served as stepping-stones for their penetration inland and thus as posts for internal trade.

Late Bronze Age Kition was an important and wealthy city with a safe harbor and an industrial quarter at Kathari on the northern part of the city; the copper industry was related to the temples, since the workshops were found within the area of the sacred compound.[16] Kition played an important role in an active trade between Cyprus and the Aegean, based on exported copper materials and imported Mycenaean artifacts. A copper industry and overseas trade were established in the city.[17]

12. W. Bray, in *Prehistoric Settlement Patterns* (Edited by E. Z. Vogt and R. M. Leventhal), Harvard University (Cambridge, 1983), 171.

13. C. A. Smith, 'Economics and Marketing Systems: Models for Economic Geography,' *Annual Review of Anthropology* 3 (1974), 175.

14. Smith (*supra* n. 13), 177; Bray (*supra* n. 12), 172, 173.

15. Nicolaou (*supra* n. 1), 12; Cf. Karageorghis (*supra* n. 3), 135-141; Åström (*supra* n. 30); cf. Y. Lynn Holmes (*supra* n. 7), 90-110.

16. Nicolaou (*supra* n. 1), 7.

17. V. Karageorghis, in *Archaeologia Viva* (Cyprus I) (1969), 113-115.

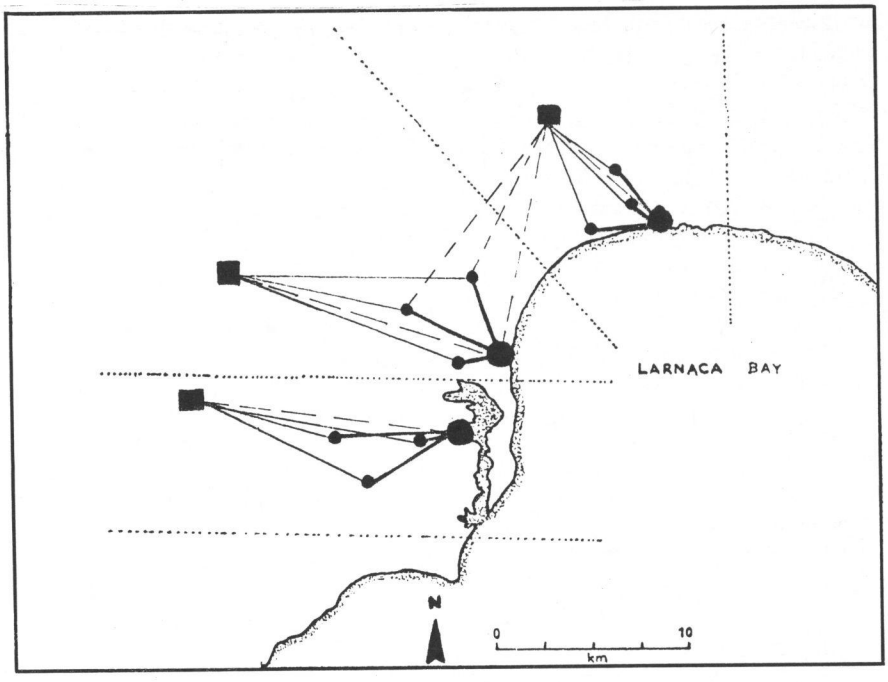


Fig. 3. Interactions between sites in the Larnaca bay.

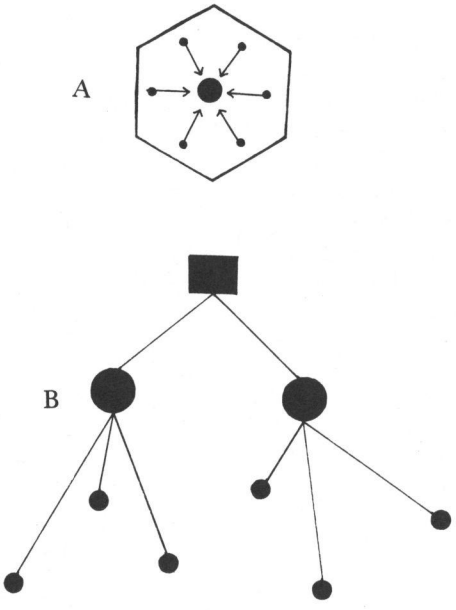


Fig. 4. Locational models. A. The K=7 model. B. A Dendritic model.

Sources of copper were probably the ore bodies at Troulli and Sha. Low-order centers, such as Shemishin, Kophinarka and Laxia tou Riou, participated in mining; copper refining, however, as well as the manufacturing of artifacts, took place in the industrial quarter of Kition.

Archaeological finds from recent excavations at Kathari and Chrysopolitissa confirm the hypothesis that the city was a wealthy political and administrative center. The discovery of houses, temples, a copper industry related to the temples, a city-wall, streets, courtyards and an abundance of Mycenaean pottery,[18] as well as other discoveries there, testify to a wealthy flourishing city with strong political, religious and economic institutions.

7. CONCLUSIONS

The settlement pattern in the southern region, being close to both the K=7 and the dendritic models, allows us to assume that:

i) The major centers on the coast exerted tight political and economic control over their hinterlands. This is evidenced by the obvious control the high-order centers exerted on the flow of copper and imported artifacts.

ii) The political and economic entities were identical, so that govermental power and administrative convenience overrode the principles of any kind of natural free market.

iii) A Mycenaean elite, based outside the system, played an important role in the political and economic control of the southern region.

18. Nicolaou (*supra* n. 1), 308; V. Karageorghis, *View from the Bronze Age: Mycenaean and Phoenician Discoveries at Kition* (New York, 1976), 26-57.