# FLUTED MACES IN THE SYSTEM OF LONG-DISTANCE EXCHANGE TRAILS OF THE BRONZE AGE: 2350-800 BC

Viktor I. Klochko Aleksander Kośko Maciej Popko Piotr Taracha Witold Tyborowski

#### **BALTIC-PONTIC STUDIES**

61-809 Poznań (Poland) Św. Marcin 78 Tel. (061) 8294799; 8294800, Fax (061) 8294788

## EDITOR Aleksander Kośko

#### EDITORIAL COMMITEE

Sophia S. Berezanskaya (Kiev), Aleksandra Cofta-Broniewska (Poznań), Mikhail Charniauski (Minsk), Lucyna Domańska (Łódź), Elena G. Kalechyts (Minsk), Viktor I. Klochko (Kiev), Jan Machnik (Kraków), Valentin V. Otroshchenko (Kiev), Marzena Szmyt (Poznań), Petro Tolochko (Kiev)

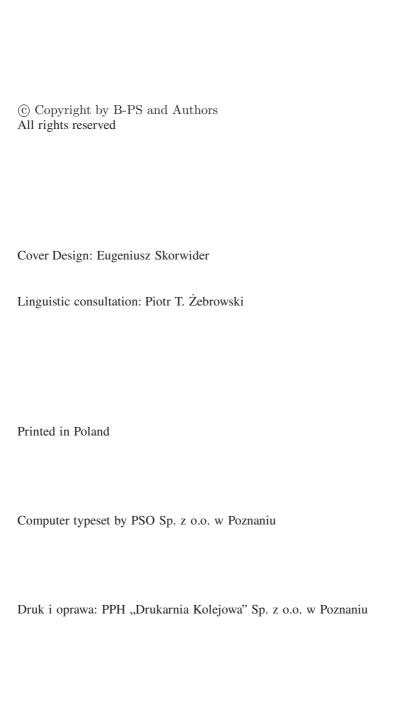
SECRETARY Marzena Szmyt

SECRETARY OF VOLUME Agnieszka Przybył

ADAM MICKIEWICZ UNIVERSITY INSTITUTE OF EASTERN STUDIES INSTITUTE OF PREHISTORY Poznań 2001 ISBN 83-86094-10-9 ISSN 1231-0344

# FLUTED MACES IN THE SYSTEM OF LONG-DISTANCE EXCHANGE TRAILS OF THE BRONZE AGE: 2350-800 BC

Viktor I. Klochko Aleksander Kośko Maciej Popko Piotr Taracha Witold Tyborowski



# **CONTENTS**

EDITORS' FOREWORD	5
PATRT I. MACES AMONG NEAR EAST SOCIETES AND IN THEIR NORTH PONTIC IMPACT AREA	7
Maciej Popko, MACE-HEADS AND SIMILAR OBJECTS IN THE ANCIENT NEAR EAST ACCORDING TO WRITTEN SOURCES	7
Piotr Taracha, THE MACE IN THE ANCIENT NEAR EAST AND EGYPT ACCORDING TO ARCHAEOLOGICAL SOURCES	2
Viktor I. Klochko, MACES OF THE NEOLITHIC-BRONZE AGE OF THE NORTHERN PONTIC REGION	22
PART II. FLUTED MACES: TAXONOMY, TOPOGENESIS AND FUNCTIONS. PERSPECTIVE OF THE MESOPOTAMIAN CIVILIZATION	1
Aleksander Kośko, fluted maces in cultural systems of the borderland of eastern and western europe: 2350-800 BC.  TAXONOMY, GENESIS, FUNCTION	31
Witold Tyborowski, MESOPOTAMIA, ANATOLIA AND THE CIRCUMPONTIC REGION IN THE EARLY BRONZE AGE8	32
References9	19
List of Authors11	9

#### Editor's Foreword

Fluted maces (Kannelierte Streitkolben) have not been an object of a monographic study so far. The reasons for this deficiency was the paucity of assemblage finds (mainly grave ones) and the fact that they occurred in the borderland between the East and West of Europe. Both reasons made it difficult to identify them chronologically and keep a full record of finds. The present monograph sums up almost 25 years of studies that at the outset were limited to Poland and only gradually were expanded to include the whole continent. This was made possible owing to the goodwill of many people and institutions from the Danube area, the Balkans and the Russian Plain.

The present volume of *Baltic-Pontic Studies* consists of two parts devoted, respectively, to the current state of knowledge on the position of the mace in the Near East and North Pontic civilizations, and the forms, chronology, origins, functions and socio-organizational significance of one of its types, namely the fluted mace.

As in previous volumes in this series, our intention is to inspire team, interdisciplinary studies involving scholars from different centres and countries. Only such a wide-range co-operation will bring about new developments in the areas discussed in this volume.

#### Editorial comment

- 1. All dates in the B-PS are calibrated [see: Radiocarbon vol.28, 1986, and the next volumes]. Deviations from this rule will be point out in notes.
- 2. The names of the archaelogical cultures and sites are standarized to the English literature on the subject (e.g. M. Gimbutas, J. P. Mallory). In the case of a new term, the author's original name has been retained.
- 3. The spelling of names of localities having the rank of administrative centres follows official, state, English language cartographic publications (e.g. *Ukraine, scale 1 : 2 000 000*, Kiev: Mapa LTD, edition of 1996; *Rèspublika BELARUS', REVIEW-TOPOGRAPHIC MAP*, scale 1:1 000 000, Minsk: BYELORUSSIAN CARTOGRAPHIC AN GEODETIC ENTERPISE, edition 1993).

# ERRATA

## BALTIC-PONTIC STUDIES, vol. 11

## Page 45, fig. 11:

1 – single maces from the Baltic zone; 2 – sets of maces from the Baltic zone; 3 – single maces from the Pontic-Caspian zone; 4 – sets of maces from the Pontic-Caspian zone

# Page 53, fig. 16:

3 - southern limit of the Nordic circle; 6 - approx. borderline between Corded Ware culture (west) and Fatyanovo culture (east)

Baltic-Pontic Studies vol. 11: 2002, 82-98 PL ISSN 1231-0344

Witold Tyborowski

# MESOPOTAMIA, ANATOLIA AND THE CIRCUMPONTIC REGION IN THE EARLY BRONZE AGE

The Early Bronze Age in Anatolia is divided into the following phases [Yakar 1984:62, 73; 1985:25]:

EB I — the proto-urban period (3800-2800 BC)

EB II — the early-urban period (2800-2400/2300 BC)

EB III — the period of emerging dynasties (2400/2300-2000/1900 BC)

The transition of knowledge, ideas and patterns of technology seems to be crucial for the development of present-day societies and economies. However, it was equally important for the societies of the past, even during the earliest periods of human civilisation. In the present survey we shall study the development of Anatolia in the  $3^{rd}$  millennium BC and we will try to find out to what degree the inhabitants of that region imported ideas and technologies from the more developed cultures of Mesopotamia, and how this process enabled the transfer of those achievements into further areas of the Aegean and the Circumpontic regions [see Kośko, Fluted maces..., in this volume].

#### 1. EARLIEST CONTACTS

Ancient Anatolia and Mesopotamia were two neighbouring regions which differed substantially from each other. Mesopotamia had better natural conditions for the development of agriculture but it always lacked natural resources such as stone, timber and ores, which were necessary for the production of tools and decorations as well as building activities [Mellaart 1982:7]. These materials could be found in the surrounding mountain regions of the Zagros, Lebanon and Anatolia, coastal areas around the Persian Gulf, and more distant countries of Central Asia and India [Potts 1997:100]. Thus, Mesopotamia had to establish relations with these re-

gions and the history of the country 'between the rivers' is to some degree a story of contacts with them. Anatolia was one of the areas abounding in resources necessary for the Mesopotamian cultures, and it was conveniently located, since the Euphrates, which served as an important trade route from a very early period, could be used for transporting raw materials southwards in ships and barges. Importantly for trade, this mode of transport was cheap and relatively safe [Mellaart 1982:10].

It is accepted by the majority of scholars that Anatolia was the source of various raw materials for the neighbouring areas from very early times. Among these one should mention obsidian, which was used for making tools already in the mid and late Neolithic in Syria, Palestine and Mesopotamia [Bieliński 1985:268, 400-401]. Thus the import of obsidian from Anatolia to Southern Iraq in the mid Neolithic period could have been the first tie connecting the two distant areas. Other raw materials were brought to the cities situated on the coast of the Persian Gulf from Iran, Oman and Central Asia. The export of obsidian from Anatolia was a major stimulus for the development of Çayönü Tepesi, an important town in the Upper Euphrates valley, as a trade centre. Excavations have proved that this town might have influenced smaller sites in Syria and Northern Mesopotamia. It is also worth mentioning that tokens (small clay artefacts used for record keeping in the period before the invention of writing) have been found at that site. Such objects have not been unearthed in other parts of Anatolia, which may indicate that Çayönü was really a foreign settlement in that region which never fully merged with the local environment [Schmandt-Besserat 1995:2099]. Close relations between Eastern Anatolia, Northern Syria and Northwestern Mesopotamia are well illustrated by pottery finds, which suggests the dominant position of Anatolian craftsmen in the  $5^{th}$  millennium BC [Bieliński 1985:246]. This contact remained strong although the Anatolian sources of stone for Mesopotamia were later supplanted by Halafian tradesmen of Northern Mesopotamia. On the other hand, in the 5th millennium BC elements typical for the South Mesopotamian Ubaid culture appear in the north, where the existence of Ubaid settlements is suspected [Esin 1989:137]. This suggests some kind of competition on trade routes — e.g. in some cases defensive walls surround the Ubaid settlements, which might suggest enmity between the local population and the newcomers [Bieliński 1991: 52ff.].

#### 2. CONTACTS IN THE EB I

In the second half of the  $4^{th}$  millennium BC (the late Uruk period in Southern Mesopotamia) settlements showing many material culture traits typical of Sumer appear in southeastern Anatolia. On this basis it is assumed that there were

South Mesopotamian colonies in the Upper Euphrates valley at that time [Yener 2000:44ff., Leick 2001:34ff]<sup>1</sup>. This is proved by the fact that while the Uruk colonies existed wheel-made pottery typical of Uruk settlements appears all over the region, and after they had collapsed hand-made vessels were produced instead. The number of these settlements varied from 7 to 12; the most important among them were Tepecik, Norçuntepe, Malatya and Hassek Höyük [Yakar 1984:68; Hauptmann 1976:9-20; Mellink 1982:563ff.]. The purpose of this colonizing activity was of course to provide raw materials for Mesopotamian cities, especially for Uruk, which developed into a kind of early metropolis, and Anatolia continued to be the source of materials such as copper, silver and alabaster throughout that period [Yener 2000:72ff.; Lloyd 1967:40ff.]. As far as timber is concerned, analyses prove that all of the common wood employed in the temples and palaces of the  $4^{th}$  millennium BC and later must have been imported, presumably from the Iranian highlands, but also from Lebanon and Anatolia [Potts 1997:109]. However, excavations in the Upper Tigris valley (ancient Assyria) have demonstrated that this region also had contacts with southeastern Anatolia in the 4th millennium BC, which has been supposed but never proved until now<sup>2</sup>. Finally, it is worth mentioning that in the light of archaeological excavations the Uruk settlements in contemporary Turkey were not anything extraordinary, as similar settlements can be also found in western Iran, and Syria, Mellaart suggests that Uruk-type pottery and cylinder seals found in late Gerzean layers in Egypt may prove the existence of South Mesopotamian settlements in the Nile valley too [Mellaart 1982:8]. Many similarities dated to the Uruk and Jemdet Nasr periods have also been detected in Palestine [Albright 1964:92-95].

The existence of southern settlements in Anatolia had a great impact on the development of local communities. New technics of pottery-making brought here from the south were very quickly accepted in the East Anatolian background [Mellaart 1982: 9ff.]. The same is true of metalworking. New technologies brought from Mesopotamia were developed here and centres such as Malatya became local schools of metalwork [Yakar 1984:68; Palmieri 1993:575ff.]. According to Yakar that was the main advantage of the existence of Uruk colonies in eastern Anatolia, which acted as places where the transfer of technologies to the west took place [Yakar 1984:71]. The emergence of tin-bronze products in Anatolia are supposed to be traces of this early influence. The Mesopotamian pattern brought to Asia Minor was disseminated further westwards, and according to some scholars it strongly influenced the process of urbanization in Anatolia in the 3<sup>rd</sup> millennium BC [Yakar 1984:62ff.; Palmieri 1985:208].

In the Jemdet Nasr period the functioning of the Mesopotamian colonies in Anatolia was interrupted and in the first half of the  $3^{rd}$  millennium BC contacts

<sup>&</sup>lt;sup>1</sup> Mellaart states that Ubaid settlements from the south reached Adiyaman, Malatya and Keban before the Uruk age, which means that this was merely a continuation of the previous situation. Cf Mellaart 1982:7ff.

<sup>&</sup>lt;sup>2</sup> Excavations in Norçuntepe have shown that it had trade relations with Tepe Gavra on the Upper Tigris. Cf Mellaart 1982:9.

in both directions became considerably weaker. This resulted not only in the disappearance of Mesopotamian colonies in Anatolia but also in the decline of the Uruk culture. Another factor of disturbance was the advent of new population into the Upper Euphrates valley, which took place a little later. However, some lines of contact survived and archaeological findings prove that objects made of arsenical bronze and non-alloyed copper appear, albeit rarely, through the Early Dynastic periods, e.g. in the royal tombs of Ur [Yakar 1985:37; Leick 2001:113]. At that time southeastern Anatolia was inundated by Syrian products continuing earlier Mesopotamian traditions and patterns. On the other hand, that region shows strong influences from Alisar in Central Anatolia, which proves the development of local production. Syrian ware prevails in Keban, Elaziğ and Cilicia, which suggests that Syrian settlements may have developed in place of previous Uruk sites at that time [Mellaart 1982:10].

## 3. THE DEVELOPMENT OF ANATOLIA IN THE EB II AND III PERIODS, AND CONTACTS WITH CONTEMPORARY MESOPOTAMIA

Studying the development of Anatolia in the  $3^{rd}$  millennium BC one should remember that Anatolia was never monolithic, and that already in the Early Bronze I it was divided into four main regions that differed from each other as regards types of pottery, tools and other products found in the settlements of that period. Those regions were, first, western Anatolia with Troy and Beycesultan as its main towns; second, the central part with Çatal Höyük, Hacilar and Asikli Höyük and towns situated in the North Euphrates valley; third, Çayönü Tepesi and Arslantepe (Malatya) which had the closest relations with Syria and Northern Mesopotamia [Bieliński 1985:246]; and fourth, Cilicia with Mersin and Tarsus as its main centres. In the  $3^{rd}$  millennium BC these regions developed their own peculiar styles which resulted presumably from the contacts with other regions.

In the beginning of EB II, which was contemporary with ED I, a certain decline in the main spheres of production in Anatolia can be seen. This could have been the result of the advent of a new, more primitive population from the east. The fact that a remarkable change in pottery production took place (wheel-made pottery being replaced by hand-made vessels) may suggest that the influence of a new population unfamiliar with the potter's wheel became absolutely prevailing [Mellaart 1982:11]. Mesopotamian influence was replaced by Transcaucasian elements. The new settlements became so strong that they also pushed Central Anatolian influence away from the Upper Euphrates valley. However, soon afterwards a new local style was invented and began to appear in settlements down the Euphrates. There it

was mixed with the Syrian 'Mesopotamian' pottery, which also continued to be produced.

These changes reflect the fact that the development of economy and West Anatolian settlements in the  $3^{rd}$  millennium BC was strongly influenced by several ethnopolitical events. This is true of the shifts in the following phases of EBI, II and III. The end of each of them is marked by the destruction of previous settlements. Thus, in the beginning of the  $3^{rd}$  millennium BC, most of the EB I settlements in Western Anatolia were destroyed and their population fled into the surrounding regions [Mellaart 1999:384]. This was caused by a new population wave that came from the northwest. Note the contemporaneous start of a period of agriculture in Thessalv and Greece, which does not seem to have been the result of a local evolution [Mellaart 1999:383]. Apart from Troy I and Beycesultan XVIIa, which are most significant during that period, a group of smaller settlements were also destroyed, which proves that the collapse was not a local event. What is significant, most of those settlements were not occupied during the following EB II (2800--2400/2300 BC) [Thermi, Bayrakli, Helvacikoy-Höyücek and Borkoy-Höyücek; cf Mellaart 1999:383]. In many cases the new population established new towns or occupied old ones; among the latter one should mention again Troy and Beycesultan. Those towns developed quickly and together with Alaça, Alisar, Kültepe and Tarsus placed in Central and Southern Anatolia are now believed to have become seats of political authority, possibly powerful city-states already in that early period [Mellaart 1999:386].

The existence of monarchy-type authority or at least of an oligarchy is suggested by the finds of tombs containing valuable metalware, jewels and splendid pottery. Those objects show some influence of Mesopotamian luxury ware and they may have been imports from the south, or at least they represent southern technological influence [Mellaart 1982:9]. It is highly possible that the people burried in those graves belonged to the ruling class or even to royal families. Such tombs were found in Alaça, Bitik, Alisar and other places [Yakar 1984:77]. The seat of a local princedom may have been situated also in Koçumbeli [Alkim 1968:121ff.]. As B. Alkim states, also in Alaça in layers 8-5 13 shaft graves contemporary with Troy II have been found. Some of the tombs were reused [Alkim 1968:124-5]. In some of those towns archaeologists have found remnants of buildings that may have been palaces of rulers. This points to the durability of the institution of monarchy and to its wealth.

The existence of such an upper social class accelerated the establishment of contacts with more developed regions of the Near East. This was the reason of the occurrence of objects of luxury that were either brought from Mesopotamia to Anatolia or cast in local workshops in imitation of foreign patterns is well illustrated by the similarity of daggers found at Alaça in Northern Anatolia and Ur [Bittel 1945:28; Yakar 1985:34; Mellaart 1982:12]. As far as daggers are concerned, one

can assume that they were a special kind of weaponry attributed to a special social class. Artifacts produced of precious metals or decorated could easily have become objects of long-distance trade and models imitated by one culture after another. That is why they were similar in areas as far apart as Ur and Anatolia. That is perhaps the reason why Anatolian-type daggers and axes are found in the Sofievka graves in the Northwestern Black Sea region [Klochko 1995:238ff.] and Krasnovka tomb of the Donets culture [Klochko 2001:101-103; Müller-Karpe 1994:209, PL. 42-43]. Interesting conclusions concerning interregional relations and the importance of military aristocracy may come from the analyses of stelae from the EB III, found in eastern Anatolia and Syria. They may depict a military aristocracy, which is suggested by images of daggers in their clothing [Kohlmeyer 1995: 2641].

There are some traces of indirect contacts with Mesopotamia during that time, e.g. ED II or ED IIIa Syrian-looking jewellery has been found in a grave at Kaneš, dated before 2500 BC [Mellaart 1982:12]. The economic and demographic strength of those early states is proved by topographic studies, which show that Central Anatolia as well as Cilicia during the Early Bronze Age II and III were densely populated areas that could produce their wealth, develop their political systems and maintain their status as a political units [Alkim 1968:82ff., 126; Lloyd 1967:38-41]. During the four centuries of the EB II Anatolia experienced a rapid economic and demographic rise. The number of towns and villages exceeded four hundred, with the main centres located in Western, Central and Eastern Anatolia [Mellaart 1999:406]. As a result, closer connections must have been maintained between Anatolia and the heartland of the contemporaneous Near Eastern civilisation, as proved by the finds of Anatolian arsenical bronze discovered in the royal tombs at Ur, dated to the 26th century BC [Leick 2001: 113]. Another important item is the idol head from Kaneš discovered at Mari (ED III). Other examples of interrelations are numerous parallels in weaponry, ceramics and architecture [Mellaart 1982:12].

However, the Transcaucasian population was not the only wave that appeared on the outskirts of Anatolia; another one reached the western borders of the region at that time. According to Mellaart this population had Indo-European affiliations, which would explain the similarity of material culture between the Aegean and western Asia Minor. The scholar argues that the settlers were skilled metalworkers and they considerably influenced the local metal industry, which shows many differences with regard to Central and Southeastern Anatolia, influenced by the Transcaucasian regions [Yakar 1984:71]. Recent archaeological excavations have proved that the flow of a Southeast European population into Anatolia began already in the early proto-urban period. In the course of time, elements of West and North Pontic cultures become gradually more apparent in Western, Central and Northern Anatolia [Karanovo, Krivodol-Salcuta, Kodjadermen-Gumelniţa, Cucuteni-Tripolye — Teodorova 1979: 66ff., Yakar 1984: 63.]. As a result of all these migrations, Anatolia was even less homogenous in the EB II period than it had been previously, as

far as material culture is concerned. This is best proved by the emergence of new burial customs, especially in the east, which is surely evidence of diversification in the sphere of national identity and beliefs<sup>3</sup>.

Another important change took place at the transition from EB II to EB III, which occurred ca. 2400-2300 BC This time the scope of destruction was much more extensive. Most of the big towns, e.g. Troy II, Beycesultan, Kusura B, Tarsus, Ahlatbiel, Polathi I and Poliochni V, were sacked, burnt and depopulated. Hundreds of other places were either burnt down or abandoned by the inhabitants [Mellaart 1999:407; Yakar 1985:26]. This seems to prove that the region was again affected by a strong wave of migrating tribes. However, according to Yakar there may have been other reasons for these events, such as inter-regional rivalry between the city--states that had exercised power in the preceding period, or natural catastrophes [Yakar 1985:25; 1981:106ff.; Mellink 1989:321]. Taking into consideration the first factor, one could find a parallel for this process in the South Mesopotamian Early Dynastic period, with dynasty-founding and struggle for hegemony all across the region. However, fight for hegemony would not have brought about the destruction of all the important centres, and some of them should have survived to begin the existence of Anatolia unified under the authority of one superpower, which did not happen. J. Yakar accepts at face value the reports of the Akkadian kings' campaigns against the Anatolian princes, which are however being much disputed currently [Yakar 1985:25; Liverani 1993].

It is also important that the majority of settlements destroyed at the end of EB II and the beginning of EB III ceased to be used, hence many regions were no longer cultivated but came to be utilised as grazing land by pastoral nomads [Mellaart 1999:408]. It is hardly thinkable that the winners in the wars should have preferred to stay out of the cities just out of their own accord. It is thus possible that a remarkable climatic change took place at that time, disabling the use of land for agriculture. Some scholars believe that the pastoral chieftains who governed the population in the EB III were in fact local rulers, and that they were buried in the rich tombs of that time [Yakar 1985:30]. This, however, is contradicted by the results of archaeological excavations, which have unearthed rich cities of that period with defensive walls and palaces suggesting that they were seats of local power [Yakar 1984:77].

Fortunately, thanks to archaeological data it is possible to infer where the new people who caused the destructions of the period of 2400-2300 BC came from. It is striking that the prevailing majority of new settlements and those which remained after the disastrous invasion represent a material culture in many features identical with Troy II, which was in turn typical of the West Anatolian EB II culture [Mellaart 1999:407ff.; Klochko, Pustovalov 1994:206]. Thus, new settlement did not develop

<sup>&</sup>lt;sup>3</sup> In this respect one can observe the emergence of new Kura-Arax customs of eastern origin in Northern and Central Anatolia — Kayak, Tekekôy, Ikiztepe, Alaca and Kültepe, Cf Yakar 1985:29.

an entirely new culture but to some degree continued former traditions of western Anatolia. The material culture of the new population is also similar to that of the Proto-Helladic population of the Aegean in the second half of the  $3^{rd}$  millennium BC [Yakar 1985:26]. According to Mellaart the people in question were the Luvians of the historic ages, the first Indo-European wave in the Ancient Near East. The connection of this invasion with Southeastern Europe, the North Pontic region, the Balkans and the Aegean is clear in the light of the fact that the destructions caused by a number of moving tribes at that time left a trail over a vast territory from the Lower Danube to the frontiers of Syria [Mellaart 1999:408-410].

At the same time, a new wave of population appears in eastern Anatolia. Some features of their culture are similar to the cultures of Southern Russia and the Transcaucasian regions. New settlements appear in the Upper Euphrates valley; they can be attributed to the Proto-Hurrites. According to Yakar, the new settlers came from Transcaucasia and belonged to a chain of tribes moving westwards from the area of Lake Van to the borders of Cilicia, which resisted this immigration [Yakar 1984:78ff., Mellink 1989:326]. As for Anatolian-Mesopotamian relations, one can assume that this wave, like the previous one, temporarily wiped out Mesopotamian influence on Asia Minor and weakened the connections between the two regions.

However, it was only briefly that the contacts between the south and the north were interrupted. Lively contacts between Anatolia and Mesopotamia were revived in the period of the great warrior-kings of the Akkadian dynasty [Yener 2000:44ff.; Kelly-Buccellati 1990:24; Yakar 1984:71]. This was surely made possible not only by their foreign policy but also by the arrival in Southern Mesopotamia of some groups who had maintained more intensive contacts with the north of the country and Syria and possibly with Southeastern Anatolia in the preceding period. This population knew the trade routes of the north and their kings wanted to preserve them or even to gain control over them. In the late 3<sup>rd</sup> millennium BC Anatolian towns again engaged in trading activities with the southern regions: Palestine through Syria and Southern Mesopotamia through Syria, Mari and Aššur. Apart from metal objects of luxury which were mentioned earlier, textiles were also imported by Anatolia. That trade must have been of great importance and profitability, as rivalry over the trade routes in the northern regions is thought to have caused wars between the local kingdoms of Ebla, Mari and Aššur [Mellaart 1982:12; Matthiae 1982:111-124]. Also Sargon's and Naram-Sin's activities are supposed to have been focussed on gaining the control of those routes<sup>4</sup>.

The historical background of these ties was the policies of the Akkadian kings, Sargon and Naram-Sin, ruling from the 24th to the 22nd centuries BC They are said to have made incursions into the northern regions in reports still believed to be true by many scholars. Sargon says he went as far as the Silver Mountain

<sup>&</sup>lt;sup>4</sup> This is accepted until now by many scholars e.g. Leick 2001, Yener 2000, Yakar 1985, Sallaberger and Westenholz 1999; although it is supposed to be a historical fiction of the next generations. Cf Liverani 1993:53-55.

which is usually identified with the silver-mining regions of Southeastern Anatolia; and Naram-Sin says he conquered towns situated at the foothills of the Amanus in Southern Turkey [Sallaberger, Westenholz 1999:38, 47]. The opposite view was presented by M. Liverani, who claims that Sargon never reached regions beyond Tuttul at the mouth of the Balih [Liverani 1993:53-55].

However, there may be a kernel of historical reality from the end of the  $3^{rd}$  millennium BC hidden in the story of 'Sargon the king of battle', in which the king of Akkad attacks a city in Anatolia. An interesting aspect of the legend is that the reason for the campaign against Purushanda (identified with Açem Höyük) is an economic one. Sargon is encouraged by merchants and the goddess Ištar to attack the distant town. The result of the campaign is also economic: the fabled king brings large booties from Anatolia to Akkad [Liverani 1993: 54].

More reliable information can be found in texts referring to the activity of Naram-Sin, Sargon's grandson, in northern Syria<sup>5</sup>. Fortunately, his activity in that region is confirmed by archaeological evidence. Naram-Sin, too, had his achievements engraved on stone stelae and on the rocks of border regions, which now show the extent of his state. A very important rock-carving has been found in the Upper Tigris region near modern Dyarbakir, which proves that the king reached the frontiers of Anatolia. This is also clear in the light of Mellink's analysis of one of Naram-Sin's stelae found at Hai in Southern Iraq, which shows people bearing Anatolian headdress, with Syrian or Anatolian-looking faces [Yakar 1985:37]. This means that in the  $23^{rd}$  century BC Anatolia was under the direct influence of a state that promoted South Mesopotamian culture. The influence of South Mesopotamian patterns was of a permanent nature at that time, as Naram-Sin is famous for his building activity in northern Mesopotamia and in Syria. Its most important manifestation was the royal palace at Tell Brak in the Upper Habur valley [Kuhrt 1998:48-50]. An important administrative and economic centre that developed in that place must have strongly influenced the adjacent parts of Anatolia. Another similar case was with the Armanum fortress in northern Syria [Oppenheim 1969:268], which also must have functioned as a place where ideas and technologies were exchanged.

One can assume that the periods of Early Bronze II and III in Anatolia were a time of outstanding prosperity and development. Places of particular importance in EB III in the eastern and central part of the region were reputed centres of production of bronze tools and precious metals like silver and gold. Objects such as jewels and adornments can be found in the local environment; they were put in graves with bodies of chieftains or princes; but as the local market was too small, the production developed to meet the demand of foreign importers [Yener 2000:124ff.]. This was the case in the southeastern part of Anatolia. There are considerable deposits of copper ores there, which helped to develop metal workshops. Hence, Anatolian

<sup>&</sup>lt;sup>5</sup> It says that the king of Akkad built a fortress there. Cf Oppenheim 1969:268.

products appear in some quantities in most of the bordering countries. Anatolian copper in Mesopotamia can be easily distinguished as it was processed in a special way. It is commonly known that copper from the Asia Minor mines contains an admixture of arsenic, and a special process must be applied to purify it [Potts 1997:168]. Texts from the  $2^{nd}$  millennium, especially Old Assyrian trading reports, call it fine copper [werûm dammuqum, Larsen 1996:34]. Also in Old Babylonian documents products from good and bad copper are distinguished [werûm dummuqum, von Soden 1974: 176]; these terms probably refer to Old Assyrian pure and impure copper. Mesopotamia was a major importer of ores and metalware manufactured in the central part of Asia Minor. Tin and silver were brought to the whole of Mesopotamia from Anatolia, which had its own large deposits, the likes of which did not exist elsewhere in the Fertile Crescent (Cyprus and Anatolia had the richest deposits of both metals) [Muhly 1997:8ff.]. Imports of that type are found in Cilicia and Malatya as far as Troy III, where a Syrian metal jar in Pre-Akkadian style was discovered. The development of cities and workshops in the following period proves that Anatolia again enjoyed a period of prosperity resulting from contacts with the surrounding countries. There is no doubt that the splendid art and pottery of Central Anatolia in the  $23^{rd}$  and  $22^{nd}$  centuries BC prove the existence of a well-developed country [Kilim 1968:124].

The development of eastern Anatolian metalworking is clearer when one compares the metal products found in western Anatolia with those originating in the regions of Malatya, northern Mesopotamia, and Syria, Tools manufactured in the east are of better quality and more sophisticated design, which is the result of the fact that the quality and artistic patterns came from Mesopotamia and Syria. It has been established with a degree of accuracy that, as far as metalware is concerned, good-quality luxury objects found in Anatolia were often exports from Mesopotamia [Yakar 1985:37; Moorey 1982:36]. Other needs were satisfied by the local production, which was quite remarkable. According to Moorey, in the late  $3^{rd}$  millennium BC Southern Mesopotamia produced less metal than Anatolia and thus it had to import metal bars from the north [Moorey 1982:32]. It appears from both written records and archaeological discoveries that trade in both directions flourished into the Ur III period [Kelly-Buccellati 1990:125], although according to Limet the kings of Ur may have decided to strengthen their economic relations with the south [Limet 1960:85-99]. This is contradicted by the fates of a Mesopotamian seal primarily belonging to Lukalla, an important official of Umma in the Ur III administration. This object unexpectedly turned up at Kültepe, where it was secondarily used by local merchants [Waetzoldt 1990:48].

Anatolia supplied ores of metals such as copper for many regions of Western Asia. It is generally accepted that South Anatolian mines at Ergani Maden were among the major sources of the copper found at Shanidar, Maghzalijah and Yarim Tepe. There were important copper mines in northern Anatolia, exploiting the abun-

dant deposits of copper ores found along the Black Sea coast [Kelly-Buccellati 1990:119]. Workshops situated in the north must have had a reputation for making quality weapons, including long swords, and luxury products ornamented with precious stones, found sporadically in Central Anatolia [Yakar 1985: 35]. However, the most important Anatolian centres of copper processing were situated in the Upper Euphrates valley, in the region of Malatya (Arslantepe) in Eastern Turkey [Kelly-Buccellati 1990:121; Palmieri 1993:578ff.].

As regards tin, it may also have been imported from Afghanistan in the form of lapis lazuli, but silver was surely obtained mainly from the area of Turkey, as abundant deposits are found in the northern and western parts of Asia Minor (Fig. 1). Lead analyses of silverware show that at least some of the silver objects from huge tracts of Western Asia, from Troy through Northern Mesopotamia and further south (Hafadja, Tello), derive from ores situated in the Eastern Taurus range [Muhly 1997:10]. Recent analyses prove that those deposits were exploited from the Early Bronze age I (3800-2800 BC) until the Ottoman times. Silver originating from Anatolia was often processed in Mesopotamia and some characteristic objects were cast in it, e.g. the silver quadruple-spiral beads that were exported even as far as Oman [Muhly 1997:10]. Objects made of Anatolian gold and silver found in deposits in the western part of the country can be found in tombs around western Mesopotamia (Mari), Anatolia (Karum Kaneš, Alaca) and the Aegean (Crete and Mycaene). Recent analyses prove that they were introduced by the Indo-European population that is also supposed to have brought tin-bronze technology to Anatolia [Yakar 1985:32, 36; Bilgi 1981:189]. The Aegean region (Troy, the Cyclades) is another place where arsenical-bronze ware can be found in considerable quantities [Yakar 1985: 28]. However, objects cast in this metal in Anatolia may have been exported to the Greek islands too, as single items are found there and in Southern Ukraine, where arsenical bronze does not occur typically [Klochko 2001:83; Larsen 1996:47ff.; Yakar 1985:28].

By the end of the  $3^{rd}$  millennium BC, the copper and bronze trade was well developed throughout the Fertile Crescent region. It seems, however, that trade contacts consisted mostly in short-distance connections and tradesmen from Anatolia delivered their metal products only as far as the northern cities of the Syrian plains, whence they were taken forth by the Mesopotamian tradesmen [Kelly-Buccellati 1990:122]. As for copper, there there were undoubtedly other sources, presumably in the West Zagros, near Tell Maghzalijah and Oman [Potts 1997:165]. Copper brought to Mesopotamia from the south and east was better quality and more important objects were cast in it, judging from archaeological findings — e.g. the large-scale statue carrying an inscription of Naram-Sin and the famous mask of Sargon found at Nineveh [Muhly 1997:10].

The largest deposits of copper ores occur in the northern and northeastern parts of Anatolia and on the Black Sea coast, which might have been of crucial

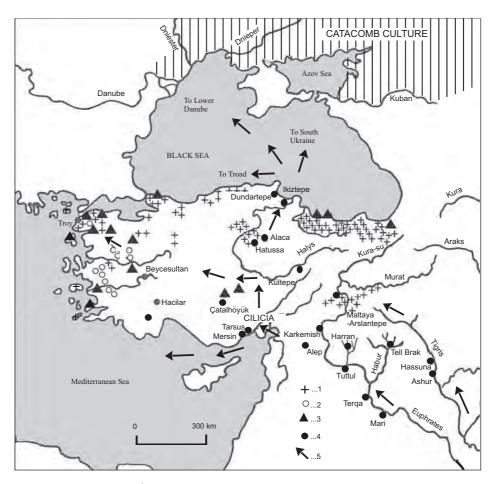


Fig. 1. Anatolia in the  $3^{rd}$  millenium BC and its external contacts. Legend: 1 - copper; 2 - silver; 3 - gold; 4 - ancient sites; 5 - directions of diffusion

importance for the export of metal technology across the sea. Nevertheless, archaeological evidence proves that towns situated at the mouths of the Halys and of other rivers were unable to expand because of their inconvenient location in a mountainous area. The mountains also cut them off partially from the rich towns of the south; the population, therefore, was not numerous and settlements like Samsun-Dündartepe, Tekeköy and Lavak were small and few [Alkim 1968:128]. However, the inhabitants of that region specialised from a very early date in the mining of ores and processing of metals, reaching an advanced technological level during the EB II and III [Kohlmeyer 1995:2642]. This enabled the development of the region, which

at the early stages of its history came into contact with other coastal regions — Troy I and II, Bulgaria, and possibly Ukraine. This is proved by the finds, at northerly sites, of metal objects revealing characteristic techniques of metal manufacturing, which may have been brought there aboard primitive ships traversing the Black and Aegean Seas. It is possible that some objects were exported directly to the North Pontic regions [Klochko 1995:238]. Similar metal-processing methods found in metal workshops all along the Black Sea coast provide an interesting indication of the dispersal of metallurgical know-how. Similar technologies of metal production are attested in some places in Anatolia and Bulgaria (Ai Bunar), and further west in Yugoslavia [Rudna Glova; Yener 2000: 89]. One must thus reckon with the possibility of close relations between the diverse Circumpontic regions, many of which had important deposits of ores and developed similar techniques of metal casting. This is a matter for further studies, but one can already suggest that Anatolia was the core part of that zone and the source of patterns imitated in the other parts.

As regards the routes of exchange across the Black Sea, the river Halys may have played a significant role in this process. The important town of Zalpa (modern Ikiztepe), known later from the Hittite period but dating back at least to the  $3^{rd}$ millennium BC, was situated at the mouth of the river. The route ran southwards from there and reached Alaça Höyük by land, because the river was not navigable. One should mention that in the EB II and III levels at Alaca several important finds have been made, e.g. a town with defensive walls, princely graves, and fine quality alabaster figurines of idols; such evidence testifies to the development of the region [Kohlmeyer 1995:2642]. Finally, the route reached Hattusa in Central Anatolia, which was also an important centre of production and trade in the  $3^{rd}$ millennium BC. However, the insufficient scope of excavations in the north does not allow to determine the intensiveness of contacts. It can be assumed that the northern region was not entirely separated from the other parts of Anatolia. We know that at the turn of the 2<sup>nd</sup> millennium BC many forms of metalwork from Northern Syria/Mesopotamia and even from the southernmost parts of Mesopotamia can be traced to northern Anatolia as a result of long-distance trade<sup>6</sup>.

One of the most important regions of Anatolia in the  $3^{rd}$  millennium BC was Cilicia. Its location close to the Syrian coast enabled foreign political contacts and trade by sea from very early times. In the EB II and III Cilicia had many connections with the neighbouring regions. This is proved by the finds of Cilician products in foreign lands and, conversely, of foreign merchandise in Southern Turkey. The contacts were mainly with Syria and Mesopotamia. North Mesopotamian pottery and Syrian bottles were found in Cilician towns; in EB II this represents influence from the Fertile Crescent (ED II) in general — e.g. a Syrian silver bottle from ED II has been found at Eskiyappa [Cf Mellaart 1982:12].

<sup>&</sup>lt;sup>6</sup> This concerns spearheads, shaft-hole axes and other bronze and silver objects such as the animal figurines found at Alaça Höyük, Hasanoğlan and Horoztepe. Cf Yakar 1985:33, Kohlmeyer 1995:2643, Bilgi 1990:119-129.

As far as Syrian bottles are concerned, one should remember that apart from any possible influence in pottery style they testify to the import of luxury ware (perfumes and oils) into Anatolia, since the bottles themselves were not valuable objects.

On the other hand, Cilician products are found in distant countries, for example a vase discovered in an Egyptian tomb dated to the 4th Dynasty. As regards other directions, pottery of a type appearing in great numbers in Tarsus is also frequent in Troy (layers II-IV) and in many other locations in the west [Alkim 1968:83ff.]. As for urban architecture, walls and tombs representing patterns similar to those found in Cilicia appear in various places in Eastern Anatolia, such as Tilmen and Gedikli, which suggests Mesopotamian influence [Alkim 1968:94-97]. Sometimes excavations offer glimpses of political history, as in the case of Tarsus, situated at the gates of Cilicia on an important route from the south and east to the north. Archaeologists have proved that its ramparts were twice destroyed and burnt down by enemies, and twice rebuilt. This means that the political situation was at times very unstable, and that the country was raided by the armed forces of local rulers.

One could furthermore say that Anatolia in its entirety was in a sense a route via which the exchange of technologies and ideas took place. This is why regions surrounding Anatolia share various similarities with it, as well as showing a degree of convergence with Mesopotamia. This can be seen in Troy, the most important and the most famous centre on the western periphery of Anatolia, where levels II-V correspond to EB II/III. In the  $3^{rd}$  millennium the culture of Troy shows many connections with Central Anatolia in its architectural design and the construction of walls and megarons. In fact, their style is unmistakably Anatolian. It is generally accepted that this kind of architecture spread westwards from Central Asia Minor into the Aegean region [MacKendrick 1962:22]. From Troy and the Aegean, this model of town-building reached the territories of Southeastern Europe as far as the Lower Danube [MacKendrick 1962:28]. Eastern influence in Troy is also exemplified by smaller items, such as jewels, beads, pins and objects connected with the spiritual life of the population. The presence of small nude figurines of the mother-goddess is also quite significant, being typical of the whole Anatolian Plain and the Proto--Helladic culture of the Aegean [MacKendrick 1962:19].

One should remember that the numerous regions situated on the coasts of the East Mediterranean and the adjacent seas were in a convenient situation, being linked by maritime routes used by traders from very early times. This is best proved by texts and archaeological discoveries. The story of Wen Amun and a Ugaritic text prove that in the second half of the  $2^{nd}$  millennium BC there was some kind of international maritime law. [Wachsmann 1997:508].

The earliest records of seafaring date back to the  $3^{rd}$  millennium BC, and they tell of Egyptian naval expeditions which were surely launched with economic aims in mind. A record of such an event is found in Uni's pseudo-autobiography

found in his tomb, dated to the 6th Dynasty of Egypt [Wilson 1969:227ff]. At the same time seagoing ships were no doubt used all over the East Mediterranean, as shown on pottery drawings from Syria [MacKendrick 1962:19]. However, the most revealing evidence comes from the  $2^{nd}$  millennium BC and later, in the form of ancient shipwrecks found in recent decades near the coasts of Turkey, Greece and the Levant. One of the most famous is the discovery near Uluburun in Western Turkey. The objects discovered aboard the ship are quite astonishing. Among items of local origin there are some pieces of Baltic amber, a Balkan axe or mace-head and some Italian swords [Pulak, Bass 1997:266ff.]. Such a variety of items coming from very distant regions and found in one place proves that even at that time the horizons of trade were very wide and the exchange of technologies across the Aegean or Black Seas was hardly a problem. The role of maritime contacts is easy to see in the similarities between the coastal towns of the Western and Southern Anatolia such as Troy and Tarsus; there jointly differed more from inland centres, even those that were geographically closer to them [MacKendrick 1962:24; Mellink 1989:323ff.].

The circulation of new technologies and tools was unrestricted and it is certain that some metallurgical methods and other inventions, such as the potter's wheel, reached Western Anatolia as far as the Troad, to spread further across the Aegean. Also several finds of a tin-bronze alloy in contemporaneous Troy can be attributed to Central Anatolian workshops [Yakar 1979:55f; 1985:28].

#### 4. ANATOLIA BETWEEN THE SOUTH AND THE NORTH: CONCLUSIONS

It can be assumed that as regards the most important aspects of the economic (and also, most probably, the political) development of Asia Minor in the Early Bronze II and III, Anatolia was not a periphery of Mesopotamia but, having absorbed Mesopotamian elements, developed a culture of its own and enabled the further dispersal of this cultural pattern. This proves that in the  $3^{rd}$  millennium BC, during which an archaeologically observable boom in the use of metals took place, Anatolia played a very important role in the exploitation and processing of ores [Muhly 1997:8]. It was in fact one of the most important centres of metal production in the Near East. The political history of that region in the  $3^{rd}$  millennium BC is not known for want of any written documents, but archeological excavations have unearthed settlements whose nature proves that some of the towns were seats of political authority; there is also evidence of foreign incursions and internal disturbances.

Contacts between Anatolia and Mesopotamia were not always maintained directly by long trade routes, as was the case in the Uruk period. This concerns especially the periods of EB II and EB III, when influences diffused gradually, with a number of intermediary regions being involved in mutual relations and trade [Kohl 1987:15]. As for contacts with Mesopotamia proper, it was especially Eastern Anatolia (the area of Malatya) that maintained the closest relations with the south. In the south it bordered Northern Syria and the Upper Tigris valley, which were strongly connected with Central Mesopotamia and it was only from there that the lines of contact reached the south. However, there is some evidence of direct contacts, albeit rare, between the distant regions of Anatolia and Babylonia in the  $3^{rd}$  millennium BC.

In the  $3^{rd}$  millennium BC Anatolia was famous for its silver production, which determined the character of its contacts with the neighbouring regions at that time. No wonder then that Sargon and Naram-Sin, the great conquerors of that period, may have wanted to annex it into their state [Potts 1997:174; Yener 2000:44ff.]. At any rate, Anatolia was strongly influenced by Mesopotamia, as is eveident from the similarity of luxury goods and other items brought directly by tradesmen. It is especially weaponry that can be used as evidence of such exchange [see Kośko, Fluted maces. . . , in this volume]. The use of such objects is indicative of the character of the society in question or at least of its élite.

Anatolia also mediated influence between the areas to the south and to the north and west of it. The main routes went from the east (the Upper Euphrates valley) or from the south (Cilicia) to the Central Anatolian Plain. They continued northwards to the mouth of Halys and from there across the Black Sea to the mouths of the Dnieper or the Danube, or along the northern coast of Anatolia to the Troad. There was also a trade route going west from Central Anatolia via Beycesultan. It reached the western Anatolian coast and then continued across the Aegean Sea into the Balkans. Cilicia offered another possibility of external contacts — a direct sea route from Tarsus along the southern coast, reaching as far as the Troad.

The correctness of these reconstructed routes is confirmed by numerous similarities linking the regions of the entire neighbouring areas of Western Asia and Southeastern Europe. Such analogies are less numerous in the northern and western Circumpontic regions, but this may be the consequence of insufficient archaeological exploration, or of the fact that most of the analyses are focussed on a single region and lack a broader context. Only some of the most obviously analogous artifacts that appear in the Mesopotamian/Anatolian and Southeastern European areas are explicitly described as imports or examples of Near Eastern influence. One should mention the weapons of the Donets culture [axes found in Krasnovka, Novazovska, Nikopol, Mikhailivka] in the east and of the Corded Ware culture [Munczyny, Bilousivka, Smolyhov, Mezhyhorka] in the west of Ukraine [Klochko 2001:101-103,

127]. The fact that some have been recognised as such is a mark of progress, insufficient to be sure, but promising exciting results for future research. It must be added that such attempts, the results of which will certainly prove revealing, should be continued in order to improve our understanding the sources of the East European cultures and to assess the regional influence of the more advanced cultures of Mesopotamia.

Translated by Piotr Gasiorowski

## **ABBREVIATIONS**

AJA – American Journal of Archaeology, New York

AnOr – Analecta Orientalia, Rome
AnSt – Anatolian Studies, London
BPS – Baltic-Pontic Studies, Poznań

ČVSMO – Časopis Vlasteneckého spodku musejního v Olomouci, Olomouc

IEJ - Israel Exploration Journal, Jerusalem

JARCE – Journal of the American Research Center in Egypt, Boston
 M.A.R.I. – MARI. Annales de recherches interdisciplinaires, Paris
 MDP – Mémoires de la Délégation archéologique en Iran, Paris
 RA – Revue d'assyrologie et d'archéologie orientale, Paris

RIA - Reallexikon für Assyriologie und Vorderasiatische Archäologie,

Berlin - New York

TGIM - Trudy Gosudarstvennogo istoricheskogo muzeia, Moskva

WVDOG - Wissenschaftliche Veröffentlichungen der Deutschen Orient-Ge-

sellschaft, Leipzig - Berlin

ZČSSA – Zprávy Československé společnosti archeologické při ČSAV, Praha

- Brno - Nitra

ZfE – Zeitschrift für Ethnologie, Berlin

#### REFERENCES

Albright W.F.

1964 Archeologia Palestyny, Warszawa.

Alkim B.U.

1968 Anatolia I. From the Beginnings to the End of the 2nd Millennium BC. Geneva.

Alp S.

1947 La déstignation du lituus en hittite, Journal of Cuneiform Studies 1:164-175.

Altschlesien

1940 Bermehrung der Sammlung des Landesamtes für Bergeschichte in Breslau. Altschlesien 9:179-189.

Andrae W.

1913 Die Festungswerke von Assur. Vol. 1: Textband. WVDOG 23.

Androsov A.V., Yaremenko I.I., Martiushenko D.V.

1990 Kurgany epokhi eneolita — bronzovogo veka Kamenskogo polya. In: *Issledovania po archeologii Podneprovya*, 4-21. Dnepropetrovsk.

Antoniewicz W.

1928 Archeologia Polski. Warszawa.

1930 Czasy przedhistoryczne i wczesnohistoryczne ziemi wileńskiej. In: Wilno i Ziemia Wileńska, 103-123. Wilno.

Arik R.O.

1937 Les fouilles d'Alaca Höyük, enterprises par la Société d'histoire turque, rapport préliminaire sur les travaux en 1935. Ankara.

Arkheologiya

1985 Arkheologiya Ukrainskoy SSR, vol. 1. Kiev.

Artemenko I.I.

1967 Plemena verkhnego i srednego Podneprovia v epokhu bronzy. *Materialy i issledovaniya po archeologii SSSR* 148.

Bar-Adon P.

1962 The Expedition to the Judean Desert, 1961: Expedition C — The Cave of the Treasure. *IEJ* 12:215-226.

Berezanska S.S., N.N. Cherednichenko

1985 Srubnaya kultura. In: Arkheologiya Ukrainskoy SSR, vol. 1, 462-473.

Berezanska S.S., V.I. Klochko

1998 Das Gräberfeld von Hordeevka. Archäologie in Eurasien 5. Rohden/Westf.

Berounská M.

1987 Bulavy ve střední Evropě, Praehistorica 13:27-61.

Bieliński P.

1985 Starożytny Bliski Wschód od początków gospodarki rolniczej do wprowadzenia pisma. Warszawa.

1991 Ubaid Północny. Mezopotamia pomiędzy Dijalą a Haburem w latach 4800-4000 p.n.e. Warszawa.

Bilgi Ö.

1990 Metal objects from Ikiztepe in Turkey, Beiträge zur Allgemeinen und Vergleichenden Archäologie 9/10:119-219.

Bittel K.

1945 Grundzüge der Vor- und Frühgeschichte Kleinasiens. Tübingen.

Blume E.

1908 Verzeichnis der Sammlungen des Uckermärkischen Museums — und Geschichtsvereins in Prenzlau. Prenzlau.

Bonnet H.

1926 Die Waffen der Völker des Alten Orients. Leipzig.

Bouzek J.

1966 The Aegean and Central Europe an Introduction to the Study of Cultural Interrelations 1600-1300 B.C. *Pámatky archeologické* 57:242-276.

Braidwood R.J., B. Howe

1960 Prehistoric Investigations in Iraqi Kurdistan, Chicago.

Bratchenko S.N.

1976 Nizhneye Podoniye v epokhu srednej bronzy. Kiev.

Bratchenko S.N., O.G. Shaposhnikova

1985 Katakombnaya kulturno-istoricheskaya obshchnost. In: *Arkheologiya Ukrainskoy SSR*, vol. 1, 403-420. Kiev.

Bronicki A.

2000 Badania archeologiczne neolitycznej osady wyżynnej w Zimnem koło Włodzimierza Wołyńskiego jako przykład współpracy archeologów polskich i ukraińskich. In: *Zamojszczyzna i Wołyń w minionym tysiącleciu. Historia, kultura, sztuka*, 29-38. Zamość.

Buchvaldek M.

1967 Die Schnurkeramik in Böhmen. Praha.

Buchvaldek M., D. Koutecký

1970 Vikletice. Ein schnurkeramisches Gräberfeld. Praha.

Bukowski Z.

1998 Pomorze w epoce brązu w świetle dalekosiężnych kontaktów wymiennych. Gdańsk.

Busse H.

1915 Eine durchbohrte Steinkugel aus Radlow. ZfE 47:228-232.

Butent-Stefaniak B.

1997 Z badań nad stosunkami kulturowymi w dorzeczu górnej i środkowej Odry we wczesnym okresie epoki brązu. Wrocław – Warszawa – Kraków.

Calmeyer P.

1976 - 1980 Keule. B. Archäologisch. RIA V:579-583.

Catalogue

1893 Katalog Kollektsii A.N. Pol v Ekaterinoslav. Kiev.

Chmielewska A., M. Góra

1987 Kamienna buława z Puczniewa w województwie sieradzkim. *Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi* 34;33-35,

Christian V.

1940 Altertumskunde des Zweistromlandes, Vol. 1. Leipzig.

Ciałowicz K.M.

1987 Les têtes de massues des périodes prédynastique et archaïque dans la valée du Nil. Zeszyty Naukowe Uniwersytetu Jagiellońskiego, Prace Archeologiczne 41, Studia z Archeologii Śródziemnomorskiej 9.

- 1997 Remarques sur la tête de massue du roi Scorpion. In: J. Śliwa (Ed.) Studies in Ancient Art and Civilization 8. Zeszyty Naukowe Uniwersytetu Jagiellońskiego, Prace Archeologiczne 59:11-27.
- 1999 Początki cywilizacji egipskiej. Warszawa Kraków.

## Cocquerillat D.

- 1951 Notes pour servir à l'histoire des masses d'armes. RA 45:21-24.
- 1952 Les masses d'armes d'après les textes, RA 46:121-136.

#### Cofta-Broniewska A.

1982 Epoka metali. In: A. Cofta-Broniewska, A. Kośko, *Historia pierwotna społeczeństw Kujaw*, 120-235. Warszawa – Poznań.

## Czebreszuk J.

2001 Schyłek neolitu i początki epoki brązu w strefie południowo-zachodniobałtyckiej (III i początki II tys. przed Chr.). Alternatywny model kultury, Poznań.

## Czebreszuk J., M. Ignaczak, J. Łoś

1997 Osadnictwo wczesnej kultury łużyckiej w Narkowie, gm. Dobre, stanowisko 9. Poznań.

## Czebreszuk J., A. Kośko, P. Makarowicz, M. Szmyt

2000 Podsumowanie. In: A. Kośko (Ed.), Archeologiczne badania ratownicze wzdłuż trasy gazociągu tranzytowego, Vol. III Kujawy, Part 4, Osadnictwo kultur późnoneolitycznych oraz interstadium epok neolitu i brązu: 3900-1400/1300 BC, 569-572. Poznań.

#### Červinka I.L.

1908 Moravské starožitnosti, Kojetín.

#### Danilenko V.N.

1974 Eneolit Ukrainy. Kiev.

## Dabrowski J.

- 1972 Powiązania ziem polskich z terenami wschodnimi w epoce brązu. Wrocław Warszawa Kraków Gdańsk.
- 1997 Epoka brązu w północno-wschodniej Polsce, Białystok.

#### Dickinson O.

1994 The Aegean Bronze Age. Cambridge.

#### Domańska L.

1990 Kakukasko-nadczarnomorskie wzorce kulturowe w rozwoju późnomezolitycznych społeczeństwNiżu strefy pogranicza Europy Wschodniej i Środkowej. Inowrocław.

#### Durand J.-M.

- 1983 Textes administratifs des salles 134 et 160 du palais de Mari, *Archives royales de Mari* 21.
- 1993 Le mythologème du combat entre le Dieu de l'Orage et la Mer en Mésopotamie, *M.A.R.I.* 7:41-61.

### Edgren T.

1974 De ristade klubbhuvdena av sten och deras datering. *Finski Museum* 1974: 30-49.

#### Esin U.

1989 An Early Trading Centre in Eastern Anatolia, Anatolia and the Ancient Near East. In: K. Emre et al. (Eds) *Studies in Honor of Tahsin Özgüç*, 135-138. Ankara.

#### Frankfort H.

1935 Early Dynastic sculptured mace-heads. AnOr 12:105-121.

#### French D.H.

1962 Excavations at Can Hassan. Preliminary Report. AnSt 12:27-40.

#### Gedl M.

- 1964 Wczesny i starszy okres epoki brązu na Górnym Śląsku. *Przegląd Archeologiczny* 16:24-55.
- 1975 Kultura przedłużycka. Wrocław Warszawa Kraków Gdańsk.
- 1996 Uwagi o datowaniu i przynależności kulturowej kamiennych główek buław na Śląsku. *Silesia Antiqua* 38:35-43.

## Gershkovich J.P.

1982 Kulturno-khronologicheskie gruppy pogrebeniy epokhi sredney — pozdney bronzy kurgana u s. Prishib. In: *Materialy po khronologii arkheologicheskikh pamyatnikov Ukrainy*, 46-61. Kiev.

#### Ghirshman R.

- 1938 Fouilles de Tepe Siyalk près de Kashan, 1933, 1934, 1937. Vol. 1. Paris.
- 1966 Tchoga Zanbil (Dur-Untash). Vol. 1: La ziggurat. MDP 39

#### Gimbutas M.

- 1965 Bronze Age Cultures in Central and Eastern Europe, Paris London.
- 1991 Die Balten. Frankfurt/M Berlin.

#### Gottwald A.

1906 Sídliště neolitická a nálezy kamenných nástrojov na Prostějovsku. *ČVSMO* 36:41-61.

## Govedarica B, E. Kaiser

1996 Die äneolithischen abstrakten und zoomorfen Steinzepter Südost- und Osteuropas. *Eurasia Aniqua* 2:59-103.

#### Górski J.

1999 Die Beziehungen zwichen den westlichen Kleinpolen und dem Gebiet der Slowakei in der Klassischen Phase der Trzciniec Kultur (Ausgewählte Aspekte). In: J. Bátora, J. Peška (Eds), Aktuelle Probleme der Erforschung der Frühbronzezeit in Böhmen und Mähren und in der Slowakei, 251-265. Nitra.

#### Gumiński W.

1989 Gródek Nadbużny. Osada kultury pucharów lejkowatych. Wrocław – Warszawa – Kraków – Gdańsk – Łódź.

## Harding A.F.

1984 The Mycenaeans and Europe, London.

### Hauptmann H.

1976 Die Entwicklung der frühbronzezeitlichen Siedlung auf dem Norsuntepe in Ostanatolien, Archäologisches Korrespondenzblatt 6:9-20.

## Heuzey L.

1910 Nouvelles fouilles de Tello, Paris.

#### Horst F.

1981 Bronzezeitliche Steingegenstände aus dem Elbe-Oder-Raum. Bedenkmalp-flege in Mecklenburg. Jahrbuch 1981:33-83.

## Isaenko V.F.

1976 Arkheologicheskaya karta Belorussii. Pamyatniki bronzovogo veka, Minsk.

1970 Bronzovyi vek. In: Ocherki po arkheologii Belorussii, 109-135. Minsk.

#### Ivanova S.V.

2001 Sotsialnaya struktura naseleniya yamnoy kultury Severno-Zapadnogo Prichernomorya. Odesa.

## Jadczykowa I.

1970 Sprawozdanie z badań prowadzonych w latach 1967 i 1968 na stanowisku 1 w Wietrzychowicach, pow. Koło. *Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi* 17:125-155.

#### Jasnosz S.

1975 Materiały do osadnictwa w starszej epoce brązu na obszarze Wielkopolski południowej. *Fontes Archaeologici Posnanienses* 25:85-94.

#### Jażdżewski K.

1936 Kultura puharów lejkowatych w Polsce zachodniej i środkowej. Poznań.

1981 Pradzieje Europy Środkowej. Wrocław – Warszawa – Kraków – Gdańsk.

#### Kadrow S.

2001 U progu nowej epoki. Gospodarka i społeczeństwo wczesnego okresu epoki brazu w Europie środkowej, Kraków.

#### Kadrow S., J. Machnik

1997 Kultura mierzanowicka. Chronologia, taksonomia i rozwój przestrzenny. Kraków.

## Kelly-Buccellati M.

1990 Trade in metals in the Third Millennium in northeastern Syria and Eastern Anatolia In: P. Matthiae, M. van Loon, H. Weiss (Eds), Resurrecting the Past. A Joint tribute to Adnan Bounni, 117-131. Leiden.

#### Klein L.S.

1968 Proiskhozhdenie donetskoy katakombnoy kultury. Leningrad (avtoreferat).

#### Klochko V.I.

- 1995 Copper Objects and the Question of 'Sofievka Metallurgy'. In: A. Kośko (Ed.) Cemeteries of the Sofievka type: 2950-2750 BC, *BPS* 3:235-242.
- 1996 Novyie aspekty sviazey Seviernogo Prichernomoria z Vostochnym Sredzimnomoriem. In: 'Mir Olbii' Pamiatnik issledovatielu i issledovanie pamiatnika. Materialy yubileynykh chtaienu posviashchenykh 90-lieti so dnia rozhdienia Professora L.M. Slavina, 129-131. Kiev.
- 2001 Weaponry of Societes of the Northern Pontic Culture Circle: 5000-700 BC.
  BPS 10.

## Klochko V.I., A. Kośko, M. Szmyt

1999 A comparative chronology of the area between Vistula adn Dnieper: 3150-1850 BC. In: The Foundations of Radiocarbon Chronology of Cultures between the Vistula and Dnieper: 3150-1850 BC. In: A. Kośko (Ed.) The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150-1850 BC, *BPS* 7:264-282.

Klochko V.I., V.I. Manichev, V.N. Kvasnitsa, S.A. Kozak, L.V. Demchenko, M.P. Sokhatskiy

2000 Concerning Tripolye metallurgy and the virgin copper of Volhynia. In: A. Kośko (Ed.) The Western Order Area fof the Tripolye Culture, *BPS* 9:168-186.

#### Klochko V.I., S.Z. Pustovalov

1994 The Warfare of the Northern Pontic Steppe — Forest-Steppe Pastoral Societies: 2750-2000 BC (Catacomb Culture). In: A. Kośko (Ed.) Nomadism and pastoralizm in the circle of Baltic-Pontic early agrarian cultures: 5000-1650 BC, *BPS* 2:196-215.

#### Kłosińska E.

1997 Starszy okres epoki brązu w dorzeczu Warty. Wrocław.

#### Knapowska-Mikołajczykowa A.

1956 Wczesny okres epoki brązu w Wielkopolsce. Fontes Archaeologici Posnanienses 7:31-115.

#### Kohl P.L.

1987 The Ancient Economy, Transferable Technologies and Bronze Age World System: A view from the northeastern frontier of the Ancient Near East. Centre and Periphery in the Ancient World, 13-24. Cambridge.

## Kohlmeyer K.

1995 Anatolian Architectural Decorations, Statuary, and Stelae, Civilizations of the Ancient Near East. New York.

#### Korfmann M.

1976 - 1980 Keule. C. Archäologisch (Prähistorisch). RIA V:583-586.

#### Kostrzewska M.

1953 Wyroby kamienne kultury łużyckiej w Wielkopolsce w epoce brązowej i wczesnożelaznej. *Przegląd Archeologiczny* 9:214-238.

#### Kostrzewski J.

- 1923a Wielkopolska w czasach przedhistorycznych, 2nd edition. Poznań.
- 1923b Nowe nabytki Działu Przedhistorycznego Muzeum Wielkopolskiego za lata 1922-1925. *Przegląd Archeologiczny* 3:221-233.
- 1928a I, II, III okres epoki brązowej w Polsce. Przegląd Archeologiczny 4:1-35.
- 1928b Nowe nabytki Działu Przedhistorycznego Muzeum Wielkopolskiego za lata 1922-1925. *Przegląd Archeologiczny* 3:221-233.
- 1954 Ze studiów nad wczesnym okresem żelaznym w Polsce. *Slavia Antiqua* 4:22-70.

#### Kośko A.

- 1979 Rozwój kulturowy społeczeństw Kujaw w okresach schyłkowego neolitu i wczesnej epoki brązu. Poznań.
- 1981 Udział południowo-wschodnioeuropejskich wzorców kulturowych w rozwoju niżowych społeczeństw kultury pucharów lejkowatych. Poznań.
- 1985 Influences of the 'Pre-Yamnaya' ('Pre-Pit grave') Communities from Black Sea, Steppe Area in Western European Cultures. In: J.K. Kozłowski, J. Machnik, L'éneolithic et le début de l'âge du bronze dans certains régions de l'Europe, 57-72. Wrocław Warszawa Kraków Gdańsk Łódź.
- 1988 Rozwój kulturowy społeczeństw Kujaw w okresie późnego neolitu oraz interstadium epok neolitu i brązu w aspekcie recepcji egzogennych wzorców kulturotwórczych. In: A. Cofta-Broniewska (Ed.), *Kontakty pradziejowych społeczeństw Kujaw z innymi ludami Europy*, 145-183. Inowrocław.
- 1989 Cultural Development of Kuiavian Communities during the Late Neolithic and Neolithic-Bronze Age. Interstage in the Aspect of Exogenous Culture-Forming Pattern Reception. In: A. Cofta-Broniewska (Ed.), *Prehistoric Contacts of Kuiavian Communities with others Europeans Peoples*, 155-182. Warszawa.
- 1991 The Vistula-Oder Basins and North Pontic Region. *The Journal of Indo-*-European Studies 19:235-257.
- 2000 From research into the issue of the development dependencies of the Corded Ware culture and Yamnaya culture. In: S. Kadrow (Ed.) A Turning of Ages. Im Wandel der Zeiten. Jubilee Book Dedicated to Professor Jan Machnik on His 70th Anniversary, 337-346. Kraków
- 2001 Zagadnienie wczesnobrązowej cezury w rozwoju szlaku 'Krym-Jutlandia'. In: J. Czebreszuk, M. Kryvalcevič, P. Makarowicz (Eds), Od neolityzacji do początków epoki brązu. Przemiany kulturowe w międzyrzeczu Odry i Dniepru między VI i II tys. BC, 283-389. Poznań.

#### Kośko A., V.I. Klochko

1994 Nomadism and pastoralism — an outline programme for a discussion. In: A. Kośko (Ed.) Nomadism and pastoralizm in the circle of Baltic-Pontic early agrarian cultures: 5000-1650 BC, BPS 2:1-4.

## Kośko A., J.J. Langer, M. Szmyt

2000 As a symptom of Tripolye 'influence' in the circle of neolithic Vistula cultures. In: A. Kośko (Ed.) The Western Order Area fof the Tripolye Culture, *BPS* 9:282-288.

#### Kovaleva I.F.

1983 Pogrebalnyi obryad i ideologiya rannikh skotovodov. Dnepropetrovsk.

## Kovaleva I.F., Mukhopad S.E., Shalobudov V.N.

1995 Raskopki kurganov v Dneprovskom Nadporozhye. In: *Problemy arkheolo-giyi Podneprovya*, 4-34. Dnepropetrovsk.

## Kovalyukh N., V. Skripkin, V.I. Klochko, E.V. Sobotovich

1998 Absolute (radiocarbon) chronology of the eastern Trzciniec culture in the Dnieper Basin. In: A. Kośko (Ed.) The Trzciniec Area of the Early Bronze Age Civilization: 1950-1200 BC, *BPS* 6:130-140.

#### Kowalski K.

1975 Nowe stanowiska archeologiczne w powiecie Opatów. *Wiadomości Archeologiczne* 39:408-412.

## Kraynov [Krainov] D.A.

- 1972 Drevneyshaya istoriya Volgo-Okskogo mezhdurechiya. Moskva.
- 1987 Fatyanovskaya kultura. In: *Epokha bronzy lessnoy polosy SSSR*, 58-76. Moskya.
- 1992 On the problem of origin, chronology and periodisation of the Fatyanovo-Balanovo cultural community. In: M. Buchvaldek, Ch. Strahm (Eds) *Die Kontinentaleuropäischen gruppen der Kultur mit Schnurkeramik*, 321-327. Praha.

## Kraynov D.A., I. Loze

1987 Kultury shnurovoy keramiki i ladevidnykh toporov v Vostochnoy Pribaltike. In: *Epokha bronzy lesnoy polosy SSSR*, 51-57. Moskva.

## Krivtsova-Grakova O.A.

1949 Bessarabskiy klad. TGIM.

#### Kruts V.A., S.M. Ryzhov

2000 Tripolye Culture in Volhynia (Gorodsk-Volhynian group). A. Kośko (Ed.) The Western Border Area of the Tripolye Culture, *BPS* 9:86-110.

#### Kryvaltsevich M.N.

2001 Spravazdacha ab arkhealagichnym dosledavanniakh na Byeloruskim Polessi i Podniaproui 2000 godze. Minsk: Arkhiv NAN Byelorus.

### Kryvaltsevich M.N., N.N. Kovalyukh

1999 Radiocarbon Dating of the Middle Dnieper Culture from Belarus. In: A. Kośko (Ed.) The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150-1850 BC, *BPS* 7:151-162.

#### Kudriashov K.V.

1948 Polovetskaya step. Moskva.

#### Kunkel O.

1936 Forschungsberichte: Urgeschichte. Baltische Studien 38:383-406.

#### Kuhrt A.

1998 The Ancient Near East c. 3000-330 BC, London.

#### Kulbaka V., V. Kachur

1998 Somatychni kultury bronzovoho viku pivdnya Skhidnoyi Yevropy. Mariupol.

## Kurylenko V.Y., V.V. Ostroshchenko

1998 The Sasnytsa Culture of the Desna Area and its Links with Eastern Neighbours. In: A. Kośko (Ed.) The Trzciniec Area of the Early Bronze Age Civilization: 1950-1200 BC, *BPS* 6:87-102.

#### Kushnereva K.Kh.

1997 The Southern Caucasus in Prehistory: Stages of Cultural and Socioeconomic Development from the Eight to the Second Millenium B.C. Philadelphia.

## Kuznetsov P.F., A.A. Khokhlov

1998 Sledy travmaticheskikh povrezhdeniy liudei po materialam pogrebenii epokhi bronzy Volgo-Uralskogo regiona. In: Voyennaya Arkheologia. Oruzhie i voyennoye delo v istoricheskoi i sotsialnoi perspektive. Materialy mezhdunarodnoi konferentsii, 31-34. Sankt Petersbrug

## Lagodovska O.F., O.G. Shaposhnikova, M.L. Makarevich

1962 Mikhaylivske poselennya. Kiev.

#### Lampe W.

1963 Über einige Formen von Keulengeräten, besonders im südlichen Niedersachsen. *Die Kunde* 14:56-62.

#### Larsen M.T.

1996 Old Assyrian Copper Trade in Anatolia, Istanbul.

#### Lasak I.

- 1996 Epoka brązu na pograniczu śląsko-wielkopolskim. Część I materiały źródłowe, Wrocław,
- 2001 Epoka brązu na pograniczu śląsko-wielkopolskim. Część II zagadnienia kulturowo-osadnicze. Wrocław.

## Latynin B.A.

1967 Molotkovidnye bulavki, ich kulturnaya atributsiya i datirovka. *Arkheologicheskiy Sbornik* 9.

#### Leemans W.F.

1950 The Old-Babylonian Merchant, his Business and his Social Position. Leiden.

1960 Foreign Trade in the Old-Babylonian Period, Leiden.

#### Leick G.

2001 Mesopotamia. The Invention of the City. London.

#### Leskov A.M.

1967 O severoprichernomorskom ochage metalloobrabotki v epokhu pozdnei bronzy. In: *Pamyatniki epokhi bronzy yuga Yevropeiskoi chasti SSSR*, 143-178. Kiev.

#### Lichardus J.

1960 Kamenné nástroje na Slovensku a ich hlavné typy. *Archeologické Rozhledy* 12:842-859.

#### Lietuvos

1974 Lietuvos TSR Archeologijos Atlasas I. Vilnius.

#### Limet H.

1960 Le travail du métal au pays de Sumer au temps de la III<sup>e</sup> dynastie d'Ur. Paris.

1984 Documents relatifs au fer à Mari, M.A.R.I. 3:191-196.

1985 Les relations entre Mari et la côte mediterranéenne sous le règne de Zimri-Lim, *Studia Phoenicia* 3.

#### Liverani M.

1993 Model and Actualization. The Kings of Akkad in the Historical Tradition. In: M. Liverani (Ed.) Akkad. The First World Empire. Structure, Ideology, Traditions, 41-68. Padova.

#### Lloyd S.

1967 Early Highland Peoples of Anatolia, London.

#### Lysenko S.D.

2001 Seredne Podniprovia za doby piznov bronzi. Kiev.

#### Machnik J.

1979 Krąg kultury ceramiki sznurowej. In: W. Hensel (Ed.) *Prahistoria Ziem Polskich*, Vol. II, 337-412. Wrocław – Warszawa – Kraków – Gdańsk.

1999 Radiocarbon Chronology of the Corded Ware Culture on Grzęda Sokalska. A Middle Dnieper Perspective. In: A. Kośko (Ed.) The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150-1850 BC. BPS 7:221-250.

#### Mackay E.J.H.

1931 Report on Excavations at Jemdet Nasr, Iraq. Field Museum. Anthropology Memoirs 1. Chicago.

#### MacKendrick P.

1962 The Greek Stones Speak. The Story of Archaeology in Greek Lands. London.

#### Makarenko M.

1933 Mariupilskiy mohylnik. Kiev.

#### Makarowicz P.

- 1998 Absolute Chronology of the Trzciniec Complex in the Vistula Drainage in the Light of <sup>14</sup>C Datings. In: A. Kośko (Ed.) The Trzciniec Area of the Early Bronze Age Civilization: 1950-1200 BC. *BPS* 6:141-155.
- 1998a Rola społeczności kultury iwieńskiej w genezie trzcinieckiego kręgu kulturowego (2000-1600 BC). Poznań.
- 1999 The Problem of Reception of Otomani Culture Patterns on the Polish Lowlands. In: J. Gancarski (Ed.) Kultura Otomani-Füzesabony rozwój, chronologia, gospodarka, 231-247. Krosno.
- 2000 Osadnictwo społeczności kultury iwieńskiej oraz trzcinieckiego kręgu kulturowego (2400-1400/1300 BC). In: A. Kośko (Ed.) Archeologiczne badania ratownicze wzdłuż trasy gazociągu tranzytowego, Vol. III Kujawy, Part 4, Osadnictwo kultur późnoneolitycznych oraz interstadium epok neolitu i brązu: 3900-1400/1300 BC, 457-550. Poznań.

#### Makiewicz T.

1969 Cmentarzysko grobowców kujawskich w Wietrzychowicach powiat Koło. Sprawozdania Archeologiczne 21:25-28

#### Malov N.M.

1991 Pogrebeniya s bulavami i vtokami iz Nataliynskogo mogilnika. In: *Arkheologiya Vostochno-Yevropeiskoi stepi*, 15-42. Saratov.

## Manzura I.V.

1984 Issledovanie kurganov u pos. Svetlyi. In: *Kurgany v zonakh norostroek Moldovy*, 109-142. Kishinev.

## Marina Z.P., Romashko V.A., Severin A.B.

1995 Kurgany epokhi bronzy u s. Bogdanovka v Prisamarye. In: *Problemy Archeologiyi Podneprovya*, 35-62. Dnepropetrovsk.

#### Mark S.

1997 From Egypt to Mesopotamia. A Study of Predynastic Trade Routes. London. Matthiae P.

1982 The Problem of the Relations Between Ebla and Mesopotamia in th Time of the Royal Palace of Mardikh IIB1 (ca. 2400-2250 BC). In: H.J. Nissen, J.R. Preis (Eds) Mesopotamien und seine Nachbarn. Politische und kulturelle Wechselbeziehungen im Alten Vorderasien vom 4. bis 1. Jahrtausend v. Chr., 111-124. Berlin.

#### Mellaart J.

- 1964 Excavations at Çatal Hüyük: Third Preliminary Report. AnSt 14:39-120.
- 1982 Mesopotamian Relations with the West, Including Anatolia. Mesopotamien und seine Nachbarn. Politische und kulturelle Wechselbeziehungen im Alten Vorderasien vom 4. bis 1. Jahrtausend v. Chr., 7-12, Berlin.

- 1999 Anatolia 4000-2300 BC. In: *Cambridge Ancient History*, Vol. I, part 2, Early History of the Ancient Near East, 438-473. Cambridge.
- 1999a Anatolia 2300-1750 BC, In: *Cambridge Ancient History*, Vol. I, part 2, Early History of the Ancient Near East, 681-722. Cambridge.

#### Mellink M.J.

- 1982 Archaeology in Asia Minor, AJA 86:557-566.
- 1989 Anatolian and Foreign Relations of Tarsus in the Early Bronze Age. Anatolia and the Ancient Near East. In: K. Emre et al. (Eds) *Studies in Honor of Tahsin Özgüç*, 319-331. Ankara.

## Merpert N.Y.

1967 Razkopki v nizhney Povolzhe. In: *Pamyatniki epokhi bronzy Yuga Evropeyskoy chasti SSSR*, 82-96. Kiev.

#### Mertins O.

1904 Steinzeitliche Werkzuge und Waffen in Schlesien. Schlesiens Vorzeit in Bild und Schrift 3:1-27.

#### Mezzena F.

1998 Les stèles anthropomorphes en Europe. In: Dei di pietra. La grande statuaria antropomorfa nell'Europa del III millenio a.C., 15-89. Genève – Milano.

#### Millet N.B.

1990 The Narmer mace-head and related objects, JARCE 27:53-59

### Montelius O.

1900 Die Chronologie der ältesten Bronzezeit in Nord-Deutschland und Skandinavien, Braunschweig.

## Moorey P.R.S.

1982 The Archaeological Evidence for Metallurgy and Related Technologies c. 5500-2100 B.C., *Iraq* 44:13-38

### Mozolevskiy V.N.

1970 Albom zarisovok i photoraphii Instituta Arkheologii AN USSR. Kiev.

# Mozolevskiy V.N., S.Z. Pustovalov

1999 Kurgan 'Dovga mogila' z grupi chortomilka. *Kulturologichni studii* 2:118--140.

#### Much M.

1889 Kunsthistorischer Atlas, Wien,

# Muhly J.D.

1997 Metals, In: The Oxford Encyclopaedia of Archaeology in the Ancient Near East, vol. II, 1-15. London.

## Müller-Karpe A.

1974 Studien zur Geschichte des altanatolischen Metallhandwerks. *Offa Bücher* 75.

## Müller-Karpe H.

1974 Handbuch der Vorgeschichte 3. München.

#### Nikolova A.V.

1999 Radiocarbon dating of graves of the Yamnaya and Catacomb cultures on the Dnieper Right Bank. In: A. Kośko (Ed.) The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150-1850 BC, *BPS* 7:103-128.

### Okulicz J.

1973 Pradzieje ziem pruskich od późnego paleolitu do VII w.n.e. Wrocław – Warszawa – Kraków – Gdańsk.

# Oppenheim A.L.

1969 Babylonian and Assyrian Chronological Texts. In: J.B. Pritchard (Ed.) Ancient Near Eastern Texts Relating to the Old Testament, 265-319, 558-567. Princeton.

#### Otroshchenko V.V.

1994 O dvukh linijakh razvitija kultur plemen srubnoj obshchnosti. In: Tez. Dok. Mezhdunarodnoi konferentsii 'Problemy skifo-sarmatskoi arkheologii Severnogo Prichernomorya', 150-153. Zaporozhye.

#### Palmieri A.

- 1985 Eastern Anatolia and Early Mesopotamian Urbanization: Remarks on Changing Relations. In: M. Liverani, A. Palmieri, and R. Peroni (Eds) Studi di paletnologie in onore di Salvatore M. Puglisi, 191-213. Rome.
- 1993 From Arslantepe Metalwork to Arsenical Copper Technology in Eastern Anatolia. In: M. Frangipane, H. Hauptmann, M. Liverani, P. Matthiae and M. Mellink (Eds) Between the Rivers and Over the Mountains: Archaeologica Anatolica et Mesopotamica Alba Palmieri Dedicata, 573-599. Rome.

### Pavelčik J.

1967 Kultura s kanelovanou keramikou a skupina bošáckého typu na Morave a ve Slezsku, *ZČSSA* 9:1-18.

### Perrot J.

The Excavations at Tell Abu Mat ar near Beersheba. *IEJ* 5:17-40, 73-84, 167-189.

### Petrie W.M.F.

- 1901 Diospolis Parva. The cemeteries of Abadiyeh and Hu, London.
- 1920 Prehistoric Egypt, London.

#### Polidovich Y.B.

1993 Novye pogrebalnye pamyatniki epokhi bronzy s territorii Donetskoy oblasti, In: *Arkheologicheskij almanakh* 2:35-98. Donetsk.

## Popko M.

1995 Religions of Asia Minor. Warsaw.

1998 Zum Wettergott von Halab. Altorientalische Forschungen 25:119-125.

## Popova T.B.

1955 Plemena katakombnoy kultury. Severnoye Prichernomorye vo II tys. do n.e. *TGIM* 24.

#### Potts D.T.

1997 Mesopotamian Civilization. The Material Foundations, London.

## Prinke A., J. Skoczylas

1980 Neolityczne surowce kamienne Polski środkowo-zachodniej. Warszawa – Poznań.

### Přikryl F.

1891 Pravěké nálezy ze Záhoři. ČVSMO 8:23.

#### Puhvel J.

1991 Hittite Etymological Dictionary, Vol. 3. Berlin – New York.

1997 Hittite Etymological Dictionary, Vol. 4. Berlin – New York.

#### Pulak C., Bass G.F.

1997 Uluburun, The Oxford Encyclopaedia of Archaeology in the Ancient Near East, vol. I, 266-268. London.

#### Pustovalov S.Z.

- 1992 Vozrostnaya polovaya I sotsilnaya kharakteristika katakombnogo naseleniya severnogo Prichernomorya, Kiev.
- 1993 Deyaki blizkoskhidni elementy v ideologii katakombnogo naseleniya Severnogo Prichernomorya. *Arkheologiya* 1:24-33.
- 1994 Economy and social organization of Northern Pontic Steppe-Forest Steppe pastoral populations: 2750-2200 BC (Catacomb culture). In: A. Kośko (Ed.) Nomadism and Pastoralism in the Circle of Baltic-Pontic Early Agrarian Cultures: 5000-1650 BC, *BPS* 2:86-134.
- 1999 Modelirovanie litsa po cherepu u naseleniya ingulskoy katakombnoy kultury. *Stratum plus* 2:222-255.

#### Rajewski Z.

1965 10 000 lat Biskupina i jego okolic. Warszawa.

## Randal-MacIver D., A.C. Mace

1902 El-Amrah and Abydos. London.

### Rassamakin Y.Y.

1994 The main of the Development of the Early Pastoral Societes of Northern Potnic Zone: 4500-2450 BC (Pre-Yamnaya Cultures and Yamnaya Culture). In: A. Kośko (Ed.) Nomadism and Pastoralism in the Circle of Baltic-Pontic Early Agrarian Cultures: 5000-1650 BC, *BPS* 2:29-70.

#### Richthofen B.

1926 Die ältere Bronzezeit in Schlesien, Berlin.

## Saallaberger W., S. Westenholz

1999 Mesopotamian Akkade-Zeit und Ur III-Zeit, Freiburg.

#### Salonen E.

1966 Die Waffen der alten Mesopotamier. Eine lexikalische und kulturgeschichtliche Untersuchung, *Studia Orientalia* 33.

### Sarnowska W.

1975 Kultura unietycka w Polsce, vol. II. Wrocław – Warszawa – Kraków.

## Schmandt-Besserat D.

1995 Record Keeping Before Writing, Civilizations of the Ancient Near East, 2097--2106. New York

#### Schmidt E.F.

1937 Excavations at Tepe Hissar, Damghan, Philadelphia.

## Seger H.

1912 Maslographia 1711-1911. Schlesiens Vorzeit in Bild und Schrift 6:1-16

### Selz G.J.

2001 'Guter Hirte, Weiser Fürst' — Zur Vorstellung von Macht und zur Macht der Vorstellung im altmesopotamischen Herrschaftsparadigma. *Altorientalische Forschungen* 28:8-39.

### Shaposhnikova O.G.

1971 Katakombna kulturna oblast. In: *Arkheologiya Ukrainskoy SSR*, vol. 1, 317-334. Kiev.

### Sharafutdinova I.N.

1980 Ornamentirovannye topory-molotki iz katakomnikh pogrebenni na Ingule. *Arkheologiya* 33:60-70

#### Skibiński S.

1964 Sumin, pow. Chełm. Z Otchłani Wieków 30:106

#### Smirnov K.F.

1960 Kurgany bilya m. Velykogo Tokmaka. In: *Rozkopky kurganiv na r. Molochniy* v 1951-1952 rokakh. Arkheologichni pamyatky URSR 8:164-189, Kiev.

### Smutek K.M.

1950 Ślężańskie toporki bojowe. Z Otchłani Wieków 19:156-159.

#### von Soden W.

- 1962 Akkadisches Handwörterbuch, Vol. I. Wiesbaden.
- 1969 Akkadisches Handwörterbuch. Vol. II. Wiesbaden.
- 1974 Akkadisches Handwörterbuch, Vol. III. Wiesbaden,

## Solyman T.

1968 Die Entstehung und Entwicklung der Götterwaffen im alten Mesopotamien und ihre Bedeutung, Beirut.

#### Starr R.F.S.

1939 Nuzi. Report on the Excavations at Yorgan Tepe near Kirkuk, Iraq. Cambridge.

#### Subbotin L.V.

- 1985 Semenovskiy mogilnik epokhi eneolita bronzy. In: *Novye materialy po arkheologii Severo-Zapadnogo Prichemomorya*, 45-95. Kiev.
- 1995 Grobnitsy Kemi-obinskogo tipa Severo-Zapadnogo Prichernomorya. *Rossiiskaia Arkheologia* 3:193-197.

## Suprunenko A.B.

1994 Kurgany Nizhnego Povorsklya, Moskva – Poltava.

## Szmyt M.

1999 Tripolye traits In the materials of Central (Polish) Group of the Globular Amphora culture — a radiocarbon perspective. In: A. Kośko (Ed.) The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150-1850 BC, *BPS* 7:211-220.

## Szukiewicz W.

1904 Narzędzia kamienne gładzone w powiatach lidzkim i trockim (gub. wileńska). Światowit 5:50-58

#### Ślusarska K.

2003 Problem 'wschodnioeuropejskiej korekty' w systemie szlaków bursztynowych 2 poł. 2 tys. BC w świetle odkryć na Ukrainie. *XIII Sesja pomorzoznawcza*, Gdańsk (in print).

### Šturms E.

1936 Die ältere Bronzezeit im Ostbalticum, Berlin.

#### Tasić N.

1973 The problem of 'Mycenean influences' in the Middle Bronze Age cultures in the southeastern part fo the Carpathian Basin. *Balcanica* 4.

### Telegin D.Y.

1991 Neoliticheskie mogilniki mariupolskogo tipa, Kiev.

## Telegin D.Y., A.L. Nechytailo, I.D. Potekhina, Y.V. Panchenko

2001 Srednestogovskaya i novodanilovskaya kultury eneolita azovo-chernomorskogo reyona. Luhansk.

### Tharne H.

1975 Europaiske forbindelser. Bidrag til studiet af fremmde forbindelser in Danmarks yngre broncealder (periode IV-V). *Nationalmuseets skrifter. Arkaeologisk-historisk raekke* 16.

## The Assyrian Dictionary

- 1956 The Assyrian Dictionary of the Oriental Institute of the University of Chicago. H. Chicago.
- 1971 The Assyrian Dictionary of the Oriental Institute of the University of Chicago. K. Chicago.
- 1977 The Assyrian Dictionary of the Oriental Institute of the University of Chicago.
  M. Part II. Chicago.
- 1992 The Assyrian Dictionary of the Oriental Institute of the University of Chicago. Š. Part II. Chicago.

## Thureau-Dangin F.

1924 Notes assyriologiques. RA 21:41-42.

## Todorova H.

1989 Eneolit Bolgarii, Sofia.

### Vandkilde H.

1996 From Stone to Bronze. The Metalwork of the Late Neolithic and Earliest Bronze Age in Denmark, Aarhus.

## Vasilyev I.B., A.T. Sinyuk

1985 Eneolit Vostochno-Evropeyskoy lesostepi (voprosy priskhozdeniya i periodizatsii kultur). Kuybyshev.

### Vencl S.

1960 Kamenné nástroje prvnich zemědělců ve Středni Europé. Sbornik Narodniho Musea v Praze. Seria A-Historie 14.

#### Vladár J.

- 1973 Osteuropäische und meditterrane Einflüsse im Gebiet der Slowakei während der Bronzezeit. *Slovenská Archeológia* 21-2:55-357
- 1974 Mediterrene Einflüsse auf die Kulturenentwicklung des nordlichen Karpatenbeckens in der älteren Bronzezeit. *Prehistorica Alpina* 10:219-236.

#### Wachsmann S.

1997 Seafaring. The Oxford Encyclopaedia of Archaeology in the Ancient Near East, vol. IV, 505-509. London.

#### Waetzoldt H.

1990 Zur Weiterverwendung mesopotamischer Siegel in Karum Kaniš, *Nouvelles Assyriologiques Brèves et Utilitaires*:48.

# Wawrzyniecki M.

1913 Ślady kultury i osadnictwa przedhistorycznego Ziemi Kujawskiej. *Pamiętnik Fizjograficzny* 21.

## Wildung D.

1977 Keule, Keulenkopf. In: W. Helck, W. Westendorf (Eds), *Lexikon der Ägyptologie*. Band 3. Wiesbaden.

## Wilson J.A.

1969 Egyptian Historical Texts, In: J.B. Pritchard (Ed.) Ancient Near Eastern Texts Relating to the Old Testament, 227-264, 554-555. Princeton.

#### Włodarczak P.

1998 Chronologia absolutna grupy krakowsko-sandomierskiej kultury ceramiki sznurowej na podstawie danych z cmentarzyska w Żernikach Górnych. *Sprawozdania Archeologiczne* 50:31-54.

## Wolf W.

1926 Die Bewaffnung des altägyptischen Heeres, Leipzig.

# Wrzosek A., M. Ćwirko-Godycki

1938 Przedmioty z kamienia znalezione na cmentarzysku łużyckim w Laskach w powiecie kepińskim. *Przeglad Antropologiczny* 12:613-634.

## Wykaz

1030 Wykaz ofiarodawców zabytków przedhistorycznych ze zbiorów Państwowego Muzeum Archeologicznego w 1938 r. *Z Otchłani Wieków* 14:68-73.

## Vyazmitina M.I., Illinska V.A., Pokrovska Y.F. and others

1960 Kurgany bilya s. Novo-Pylypivky i radhospu 'Akkermen'. In: Rozkopky kugraniv na r. Molochniy v 1951-1952 rokakh. Arkheologichni pamyatky URSR 8:22-135. Kiev.

### Yadin Y.

1963 The Art of Warfare in Biblical Lands, London.

#### Yakar J.

- 1979 Troy and Anatolian Early Bronze Age chronology for Anatolia. *AnSt* 29: 51-67.
- 1984 Regional and Local Schools of Metalwork in Early Bronze Age Anatolia, Part I. *AnSt* 34:59-86.
- 1985 Regional and Local Schools of Metalwork in Early Bronze Age Anatolia, Part II. *AnSt* 35:25-38.

### Yarovoy E.V.

- 1984 Pogrebalnyi obryad nekotorykh skotovodcheskikh plemen Srednego Pruta. In: *Kurgany v zonakh novostroyek Moldavii*, 37-75. Kishinev.
- 1985 Devneyshiye skotovodcheskiye plemena Yugo-Zapada SSSR. Kishiniev.

#### Yener K.A.

2000 The Domestication of Metals. The Rise of Complex Metal Industries in Anatolia, Leiden.

# Yevdokimov G.L.

1991 Pogrebeniya epokhi ranney i sredney bronzy Astakhovskogo mogilnika. In: *Katakombnye kultury Severnogo Prichernomorya*, 187-213. Kiev.

# Zanotti D.G., B.A. Rhine

1974 The Catacomb variant of South Russia and its extensions within the Meditterranean. *The Journal of Indo-European Studies* 7:333-359.

## Zhytnikov V.G., Tsimidanov V.V.

1999 Pokhovannya zrubnovi spilnoty z bulavamy. Arkheologia 1:131-141.

## Żaki A.

1967 Pierwsze znaleziska neolityczne z Tatr Polskich i Podtatrza. *Acta Archaeologica Carpathica* 9:55-62.

## Żurek J.

1938 Wykopaliska w Matwach. Ilustrowany Kurier Polski 23.

# LIST OF AUTHORS

Victor I. Klochko Ministry of Culture and Arts of Ukraine Institute of Monument Preservation and Research Petropavlovska Street 15 04086 Kyiv, Ukraine E-mail: archaeo@naverex.kiev.ua

Aleksander Kośko Institute of Prehistory Adam Mickiewicz University Św. Marcin 78 61-809 Poznań Poland E-mail: antokol@hum.amu.edu.pl

Maciej Popko Institute of Oriental Studies ul. Krakowskie Przedmieście 26/28 00-927 Warszawa, Poland E-mail: Maciej.Popko@mail.uw.edu.pl Piotr Taracha Institute of Archaeology and Etnology Polish Academy of Sciences Al. Solidarności 105 00-140 Warszawa, Poland E-mail: taracha@iaepan.edu.pl

Witold Tyborowski Institute of History Adam Mickiewicz University Św. Marcin 78 61-809 Poznań Poland E-mail: witoldtyborowski@wp.pl

- Vol.1: Weapons of the Tribes of the Northern Pontic Zone in the 16th–10th Centuries B.C., by Viktor I. Klochko.
- Vol.2: Nomadism and Pastoralism in the Circle of Baltic-Pontic Early Agrarian Cultures: 5000–1650 BC, edited by Aleksander Kośko
- Vol.3: Cemeteries of the Sofievka type: 2950–2750 BC, edited by Aleksander Kośko
- Vol.4: *Eastern Exodus of the Globular Amphora People: 2950 2350 BC*, edited by Aleksander Kośko.
- Vol.5: Beyond Balkanization, edited by Lucyna Domańska, Ken Jacobs and Aleksander Kośko.
- Vol.6: The Trzciniec Area of the Early Bronze Age Civilization: 1950–1200 BC, edited by Aleksander Kośko.
- Vol.7: The Foundations of Radiocarbon Chronology of Cultures Between the Vistula and Dnieper: 3150–1850 BC, edited by Aleksander Kośko.
- Vol.8: Between West And East People of The Globular Amphora Culture in Eastern Europe: 2950-2350 BC, by Marzena Szmyt.
- Vol.9: The Western Border Area of the Tripolye Culture, edited by Aleksander Kośko.
- Vol.10: Weaponry of Societes of the Northern Pontic Culture Circle: 5000-700 BC, by Viktor I. Klochko.

Orders regarding B-PS should be addressed directly to the Editorial Office (Baltic-Pontic Studies, Institute of Prehistory, Św. Marcin 78, 61-809 Poznań, Poland).

The publication is carried out within the research project No. 5H01H02121 financed in the years 2001-2004 by Committee for Scientific Research and Adam Mickiewicz University Foundation.