

Physical anthropology and the “Sumerian problem”

Arkadiusz Sołtysiak

Department of Historical Anthropology
Institute of Archaeology, Warsaw University, Poland

It is already 35 years since Andrzej Wierciński has published his only paper on the physical anthropology of ancient Mesopotamia (1971). This short article was written in Polish and concerned a topic which has for many years been considered as very important by the international community of archaeologists and philologists, and especially by the scholars studying the ethnic history of Mesopotamia. This topic was usually called the “Sumerian problem”, and may be summarised as the speculations about the origin of Sumerians, the ethnic group which was universally considered to be the founder of the Mesopotamian civilisation. Research on the origins of the Sumerians was accidental in Professor Wierciński’s studies, though it may be included in the larger series of his papers concerning the problems of ethnogenesis (eg. 1962, 1973, 1978). In spite of this marginality, it was perhaps the most exhaustive contribution of a physical anthropologist to the discussion about the “Sumerian problem” and for that reason it seems to be a good starting point for an essay about the contribution of physical anthropology to the research on the history of Mesopotamia.

* * *

The Sumerians were the first known ethnic group inhabiting Mesopotamia. It does not mean that they must have been the first settlers in that region, but is the simple result of the fact that it was they who had invented the system of writing and thus were able to make their ethnicity known to modern scholars. Their origin was a subject of very intensive debate which began more than a century ago. Many authors tried to solve the “Sumerian problem” with the help of the available archaeological, linguistic, and even osteological data, but without any universally accepted conclusion. The main problem lies in the frequent confusion of linguistic, ethnical, cultural, and political components of self-identification of any human group. They are often correlated, but never completely and seldom in the way that may be predicted by any general model.

The history of the “Sumerian problem” clearly shows that the case of this ethnic/linguistic group is particularly complicated and perhaps the question is not only impossible to answer, but simply wrongly addressed.

Table 1. Simplified chronology of ancient Mesopotamia before ca. 2000 BCE.

<i>Period</i>	<i>Dating (BCE)</i>	<i>Comments</i>
Hassuna / Samarra / Halaf	~5500–4500	Neolithic / Chalcolithic archaeological cultures
Ubaid	~5000–3600	rural settlements in southern Mesopotamia; introduction of artificial irrigation
Uruk	~3600–3100	large-scale urbanisation; first pictographic script
Jemdet Nasr	~3100–2900	development of the cuneiform script
Early Dynastic I/III	~2900–2350	many Sumerian cities-states in southern Mesopotamia; Semitic states in the north
Akkadian/Gutean	~2350–2100	unification of Mesopotamia by a Semitic dynasty; invasion of Guteans from Gutium
Ur III	~2100–2000	re-unification by a Sumerian dynasty



Fig. 1. The cities of ancient Mesopotamia mentioned in the text. Modern names in italics (drawing by Barbara Kasprzak).

One certain point is that the first known cuneiform documents were written in Sumerian and it is almost sure that this language was also denoted by an earlier pictographical script, attested in some archaic tablets found in the remains of ancient cities Unug/Uruk, Ur, and Jemdet Nasr and dated back to Late Uruk and Jemdet Nasr periods, ca. 3200–3000 BCE (Oppenheim 1977:49; van Driel 2000:495). However, the use of Sumerian in writing does not imply that the writer was Sumerian. The Sumerians were no longer an identifiable ethnical group after ca. 2000 BCE, and their spoken language became completely extinct well before ca. 1800 BCE, but remained in use during the subsequent two millennia (cf. von Soden 1960; Oppenheim 1977:51; Crawford 1991:10).

The discussion about the origins of the Sumerians began in 1874, when Joseph Halévy argued that the recently discovered archaic language was only an ideographical system of denoting the Akkadian language belonging to the Semitic family (cf. Cooper 1991:48). This theory was quickly abandoned and replaced by the opinion that the Sumerians were the aboriginal inhabitants of Mesopotamia, eventually conquered by and conflicted with the Semites. Most important authors promoting such a vision were H.U. Hilprecht (1896) and L.W. King (1910), who had many followers in the early years of the 20th century (cf. Potts 1997:44; Cooper 1991:65).

The “Sumerian problem” has been defined explicitly by Henri Frankfort (1932b; cf. Potts 1997:44–45) who argued that the Sumerians were the first settlers in southern Mesopotamia and came from the Iranian highlands in the beginning of the Ubaid period (1932b:23,30,41,46). Next, the Semites arrived in the Uruk period and broke the link between the Sumerians and their original homeland (1932b:45). Frankfort’s theory was a correction of his previous opinion, published in the same year, that the Sumerians came to the Mesopotamia in the beginning of the Uruk period from the north. One of arguments in this earlier Frankfort’s theory was the assumed affinity between the Uruk pottery and the Anatolian sherds (1932a:63). In both papers Frankfort used iconography and few osteological data available in his times. Following D. Buxton (1925) he noted that the original Mesopotamian population was characterised by the dolichocephaly and that supposedly brachycephalic Sumerians (as represented in art) never became a dominating race (1932b:41–42), although the Mesopotamian population in Early Dynastic period was composed of many races, similarly as the early population of Mohenjo Daro in the Indus valley (1932b:28). This racial motif would become one of important arguments in the later history of the “Sumerian problem”.

The first author who used both osteological data and iconography was Stephen Langdon. As early as in 1927 he concluded (also with use of Buxton’s data) that the city of Kish in Early Dynastic period was inhabited by the mixture of Semites and Sumerians represented by two dolichocephalic races identified by Buxton, namely the Euroafricans and the Mediterraneans. Later, in the period of Persian domination, the third Armenoid race also contributed to the local population. This association of races and ethnic groups was later adopted by the physical anthropologists D. Buxton and D.T. Rice (1931:58) who argued that the bi-racial structure of Mesopotamian population had been established in the Early Dynastic period and the subsequent migrations did not influence it in

a considerable way (1931:66). Such a conclusion was maintained also by T.K. Penniman (1934). The racial stability of ancient Mesopotamia was explained by C.S. Coon as the result of the pollution of water in Euphrates: according to this author the immigrants from abroad were not immune to it and died out without leaving a trace in Mesopotamia's racial composition (1951:255).

It is interesting that in the discussion about the "Sumerian race" very important reports by Sir Arthur Keith (1927, 1934; cf. Molleson, Hodgson 2003) were almost completely neglected. In his study of the skulls from Ubaid (Chalcolithic) and Ur (Bronze Age) Keith also observed the continuity of Mesopotamian population since the 4th millennium BCE till the modern times and suggested possibility of Iranian or even Indian affinities. Some differences between two sites, which were close in space but somewhat distant in time, were explained as the effect of invasion of more dolichocephalic peoples from the Arabic Peninsula. However, in conclusion Keith stated that there is no difference between the alleged Sumerians (from Ur) and the Semites (from Kish).

In spite of this, Anton Moortgat (1945) and E. Speiser (1951:343) have observed (most likely after Frankfort) that in iconography the Sumerians were represented with short heads, while the skulls found at Ur and all other sites were long (cf. Potts 1997:46). It has been taken as an evidence of relatively late appearance of Sumerians in Mesopotamia who were thought to come from a distant place and in small number, sufficient to subordinate the local population, but not to change its racial characteristic (Speiser 1969:97–100).

At that point Andrzej Wierciński joined the discussion with his study on racial typology of the inhabitants of ancient Mesopotamia (1971). As previous studies, it was based not only on skeletal remains (from Ubaid, Ur, and Kish), but also on iconography. Such a choice of sources was forced by the scarcity of available in that time osteological reports. A. Wierciński, contrarywise to the earlier authors, found a far more complicated anthropological structure in the Mesopotamian population, which made the previous search for "Sumerian race" pointless. In his opinion the area of Tibet (or generally Central Asia) may be considered as the Sumerians' place of origin.

The discussion about the "Sumerian race" has been curtailed by the sober Georges Roux's remark that the iconographical representations were conventionalised and thus their comparison with the osteological data gives no valuable information (Roux 1969:136). However, some remnants of the racial argument continued to be in use also in later discussions. Fifteen years ago H. Crawford referred to the old speculation that the Sumerians were round-headed and the Semites were long-headed and noticed after C.S. Coon (1949) the great tooth size of early inhabitants of Mesopotamia, which used to be taken as the evidence of their affinities with the Indians (Crawford 1991:9).

* * *

Frankfort's first theory, placing the coming of the Sumerians in the beginning of Uruk period, was supported in 1930s by the German scholars, chiefly E. Speiser (1930) and A. Ungnad (1936:10). In Speiser's opinion the names of many most ancient cities of Sumer were Elamite in origin and the Elamites, related by him to the mountain peoples of Lullubeans and Kassites, inhabited the Mesopotamia

before the Sumerians (1930:40,46). The Sumerians were thought to invade Mesopotamia from the south, coming through the Persian Gulf from the east. Speiser suggested that they may have been related to the Dravidians (1930:83).

In later publications (1951; 1969) Speiser has maintained his theory and added some new arguments. He has argued that the diversity of cultural tradition in Late Neolithic Mesopotamia was a reflection of ethnical differences and all archaeological cultures defined by modern scholars – Hassuna, Halaf, Ubaid, Uruk – were developed by different ethnic groups (1969:99). In his opinion the Sumerians came to Mesopotamia relatively late, in the last phase of the Ubaid period, and initially settled only in the head of the Persian Gulf. During the Uruk period they moved northward and eventually lost their racial distinctiveness. Such a vision was accepted also by Anton Moortgat and Beno Landsberger (cf. Speiser 1951:345–353; 1969:99–103; Potts 1997:46). Speiser’s theory has been further developed by Jan Braun who has gathered many similarities between Sumerian and Tibetan languages and argued on that base that the Sumerians came to Mesopotamia on ships from northern India and in spite of their small number dominated the local population due to their much more sophisticated culture. Only later the Semitic tribes prevailed (1971:47–48). Braun’s hypothesis was supported by the osteological research by A. Wierciński. Also C.S. Coon suggested (on odontometrical grounds) some affinities between the inhabitants of Chalcolithic Eridu in southern Mesopotamia and the population of the Indus valley (Coon 1949:104).

Beno Landsberger introduced new linguistic arguments to the debate. In his opinion many names of important Sumerian cities as well as many technical terms in Sumerian were borrowed from another language or languages, the languages of Mesopotamia’s original inhabitants, which had been forgotten before the invention of writing. Landsberger tentatively defined two such substratum languages, and called them Proto-Euphratean and Proto-Tigridian (Landsberger 1944; 1945; cf. Gibson 1972:8; Potts 1997:46; Rubio 1999:2). This theory has been very influential since 1970s and contributed to the temporal domination of Speiser’s speculation with which it was compatible (cf. Speiser 1951:345; Oppenheim 1977:33–34). Leo Oppenheim later argued that the Sumerian possibly belonged to a group of languages specific for the mountaineers, and thus the mountains in the east may have been a cradle of Sumerians (1977:50).

The linguistic arguments have been improved by Ignace Gelb who stressed the link between ethnical and linguistic identity and recognised the previous racial arguments as inadequate (1960:259–260), although without consistency, as two pages later on he mentioned again the round-headed Sumerians (1960:262). In Gelb’s opinion the earliest southern Mesopotamian toponyms were non-Sumerian and similar to the names attested in the northern Mesopotamia. Since they were also non-Semitic, Gelb assumed that they belonged to a substratum language, associated by him with the Subarians. Another evidence of this pre-Sumerian ethnic group would be the duplicated names attested in early texts and attributed to so-called Banana-language. According to Gelb it is even uncertain that the Sumerians invented the writing system, because the earliest pictographic tablets from Uruk may be read also in other languages (1960:263–265).

Landsberger's theory of pre-Sumerian substratum in Sumerian language has been recently rejected by G. Rubio who examined the available data and concluded that all terms interpreted as the evidence of a substratum language were gradually adopted by the Sumerians together with some technical innovations in a process of diffusion, and not inherited from any hypothetical coherent language (Rubio 1999:11). Similar conclusion has been drawn by G. Gragg on a more general base (1995:2177). This situation of the Sumerian language may be compared with the present-day adoption of many English terms concerning computer technologies by other languages: in that case nobody would claim that such an influence points at English as the substratum of other languages.

Another way of reasoning has been presented by Samuel Kramer. This author has also agreed with Speiser that the Sumerians were not the aboriginal inhabitants of Mesopotamia and that they had come not long before the Late Uruk period (1948:156–157). In his opinion the reminiscences of their early history had been preserved in the tales of Sumerian legendary kings, Gilgamesh, Enmerkar, and Lugalbanda. Kramer has struck upon the idea that the invasion of barbarous tribes to more civilised country is often recorded in heroic age epics – as known from the Greek, Germanic, and Aryan traditions (1948:159). If the Sumerians produced such kind of literature, it meant for Kramer, that originally they must have been the barbarians who invaded the Mesopotamia. In Kramer's reconstruction Mesopotamia was first settled by immigrants from Iran who had painted their pottery. Somewhat later they mixed with the Semites who came from the west. Both ethnic groups created a civilisation, which expanded and eventually came into contact with early Sumerians, the nomadic tribes from Transcaucasia or Transcaspiia. These Sumerians were initially defeated by the Mesopotamians, but later they learned the more advanced art of war and finally conquered Mesopotamia. After the "heroic age", the time of regress and perturbations, the Sumerians restored the civilisation, established their cities, invented the cuneiform script, and eventually were defeated by other barbarians, the Aryan tribes (1948:160–163).

This theory was perhaps most picturesque of all and due to Kramer's authority it was seriously considered by subsequent authors in spite of its highly speculative base and clear negative evidence in the texts themselves, reporting the conflicts between well developed urban centres. In a later paper Kramer referred to the Landsberger's Proto-Euphratean hypothesis, but still argued that the Semites inhabited Mesopotamia before the Sumerians (1963:40–42). This idea was not new, being invented by Eduard Meyer already in the first decade of the 20th century (Meyer 1906; cf. O'Callaghan 1948:14). Kramer maintained also his opinion that the Sumerians came from the area of the Caspian Sea and pointed at their relation to the city of Aratta somewhere in Iran and the alleged affinity with Ural-Altai languages (Kramer 1963:42; cf. Potts 1997:47).

Much better grounded in actual archaeological evidence was the reconstruction proposed by Joan Oates who has noticed the cultural continuity from the beginning of Ubaid period until the times when the Sumerians definitely dominated in the southern Mesopotamia (Oates 1960:33–34; cf. Potts 1997:47). There was not only the continuity in the pottery style, but also the

unbroken sequence of temples in Eridu and no traces of any invasion have been found in any excavated sites from the Ubaid and Uruk periods. It is likely that the Late Neolithic and Early Chalcolithic Mesopotamian population was not homogenous – as in later times when many ethnic groups shared the same way of life – but there is not a single piece of evidence that any migration had occurred in that period and also no proof that the Mesopotamian civilisation had been created by a population of Iranian origins (Oates 1960:34–37). Joan Oates' scepticism gradually prevailed and the "Sumerian problem" started to be recognised as insoluble (cf. Rubio 1999:1). In recent years the studies on the early history of Mesopotamian populations has been more cautious, and there is general acceptance of Leo Oppenheim's opinion that "the relation between three categories, linguistic, racial and ethnic, is exceedingly complex in Mesopotamia and still far from being sufficiently investigated" (1977:48). This complexity has been acknowledged also by McGuire Gibson who explained the origins of Mesopotamian civilisation as the result of the vanishing of the eastern Euphrates' branch ca. 3300 BCE. The population had been forced to move to the cities and the Sumerians used this opportunity to establish their domination over other ethnic groups inhabiting southern Mesopotamia at that time (Gibson 1976:56). Such a way of explaining the origins of Sumerian civilisation, although disputable, was distant from racial and linguistic speculations, which had prevailed even a decade earlier.

In the story of the "Sumerian problem" the linguistic arguments were most intensively discussed and sometimes the philologists ignored in their speculations the archaeological and historical background. However, also physical anthropology contributed to the debate, especially to the idea of alleged round-headed "Sumerian race", and to the theory about the Sumerians' Indian origins. It is quite evident that this first motif originated in the misunderstanding between some physical anthropologists who treated conventional iconography as comparable with the osteological data, and philologists who enthusiastically accepted the discrepancy between skulls and art representations as "scientific" proof of the small contribution of the "Sumerian race" to the Mesopotamian population. The hypothesis of Indian origins was relatively better grounded, although no author tested it in proper way and it still remains only a speculation.

* * *

The discussion on the "Sumerian problem" began to wane in 1970s. This was chiefly the result of a paradigm shift in archaeology (but in linguistics too): the scholars of previous generations tended to explain the cultural changes in terms of ethnical differences, while the followers of "New Archaeology" aimed at the reconstruction of interactions between human populations and their environments. In this new paradigm the research on human remains was much more underlined than in the discussion on the "Sumerian race", also because the general poor state of preservation of bones in Mesopotamia. The scarcity of well preserved skulls, which were suitable for racial speculations made the physical anthropology only a supplement for linguistic and archaeological data in "ethnogenetical" speculations. However, the lack of complete skulls is not

such a great problem for ecological studies, which use a much broader toolkit than measurements of basic craniofacial diameters. In case of biochemical, paleopathological or odontological research even very fragmented human remains may provide us with valuable data.

At first sight, Mesopotamia seems to be a perfect region for studies on the history of interactions between men and their environment. There are at least three different ecological zones (the dry farming zone in the north, irrigation zone in the alluvial plain of Euphrates and Tigris, and the steppe/desert areas in the interior), two possible main subsistence strategies (plant cultivation and transhumant pastoralism) and – which is most important – five thousand years of history recorded by the written sources. In spite of this great potential, the studies on human remains are still scarce, although much more numerous than in the period of hottest discussion of the “Sumerian problem”.

Figure 2 shows temporal distribution of fieldwork and laboratory reports on human remains from Mesopotamia’s three regions: the dry farming zone in the north, the alluvial plain of Euphrates and Tigris in the south, as well as the steppes, valleys and highlands between them (joined together as Central Mesopotamia). In total, there are 92 reports. Taking into account the fact that such reports used to be sometimes published in marginal journals or available only as manuscripts and that majority of them was never quoted, it is likely that the actual number of osteological papers is somewhat higher and may exceed one hundred. This figure is still not impressive and there are many European countries where more reports on human remains from archaeological sites are written each year than the total number of all papers from the whole history of excavations in Mesopotamia.

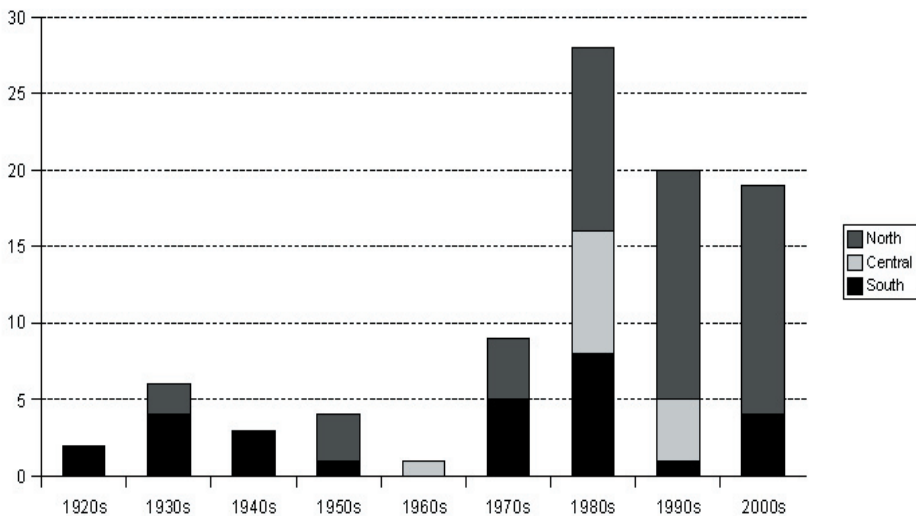


Fig. 2. The number of reports on human remains from Mesopotamian archaeological sites per decades.

There are some clear tendencies shown in the diagram. First one is the distinct increase of published reports after 1970s, related to the paradigm shift (and accompanied by the comparable increase of interest in archaeozoological

and paleobotanical studies). Second, the best decade for the osteological studies was 1980s; after the Gulf War the excavations in Iraq were suspended, which diminished the number of reports from Central and South Mesopotamia in the last two decades. However, the number of excavations in Syria’s eastern provinces increased at that time and the number of reports from North Mesopotamia has been constantly rising for last 40 years.

In spite of this rise, the actual material base for the studies on the history of Mesopotamian population is still very poor. Most reports on human remains are very general (and sometimes limited to the diagnosis of age and sex), many of them concern single skeletons or very small samples. There are only three series of human remains stored in safe places and large enough for population studies. About 550 more or less complete skeletons found in Kish have been transported to the Field Museum of Natural History in Chicago: this is the largest available sample from one site, but, unfortunately, the majority of remains are not dated (Rathbun 1975). Human bones from Ur, Ubaid, Kish, Tell Arpachiyā, Tell Abu Hureyra and some other sites are stored in the National History Museum in London and this is possibly the most important and most extensively studied museal series (e.g. Molleson 2000a, 2000b, Molleson, Blondiaux 1994; Molleson, Campbell 1995; Molleson, Hodgson 2000, 2003; Molleson, Jones 1991; Molleson et al. 1993). Bones of almost 600 individuals from the Hamrin basin in Central Mesopotamia were collected and transported to the Osaka University by the Japanese anthropologists in the late 1970s (Ishida 1981a, 1981b; cf. Ikeda et al. 1985; Wada 1982, 1994, 1998; Wada et al. 1987a, 1987b). There is also a dental collection of about 500 individuals from many sites from eastern Syria and northern Iraq housed in the Department of Historical Anthropology at Warsaw University (cf. Sołtysiak 2003[2006]).

Following the small number of available data, also research papers on the ancient human populations of Mesopotamia are very few. Apart from the discussion of the “Sumerian problem”, the discussion of the “racial history”, or the population history of Mesopotamia, is included chiefly in more general papers and books on the physical anthropology of the Near East, and this problem is often treated very briefly (Kappers, Parr 1934:43–47; Ferembach 1959, 1973; Cappieri 1969; Bernhard 1993). Only Marco Cappieri tried to reconstruct the population history of Mesopotamia from Late Neolithic to the beginning of the Iron Age, but his sample of 56 individuals from all sites and all periods was insufficient to draw any valuable conclusions (Cappieri 1970).

Similarly, regional paleopathological and paleodemographical studies are exceptional. There is one general review of all previous observations of pathologies (Rathbun 1984) and few papers concerning artificial deformations (Meiklejohn et al. 1992; Molleson, Campbell 1995). In very abundant literature discussing the changes in the size of Mesopotamian populations only few papers even used the data obtained at the cemeteries (Vertesalji 1989; Hole 1989). Relatively many papers concern the Neolithic population of North Mesopotamia; especially the remains from Abu Hureyra were carefully studied (cf. Molleson, Jones 1991; Molleson et al. 1992; Molleson 2000a, 2000b), although there are quite detailed odontological reports also from Jarmo (Dahlberg 1960), Tell Halula (Anfruns et al. 1996), Sheikh Hassan (Clère et al. 1985), and Tell

Mureybet (Özbek 1979). Most abundant literature is dedicated to the finds of Neanderthal men in Shanidar, in northmost part of Mesopotamia (cf. Stewart 1959, 1961, 1977; Trinkaus 1977, 1983).

This short overview quite clearly indicates that the use of physical anthropology in research on the population history of Mesopotamia is still marginal, in spite of the growing number of publications and a much broader possible scope of research than in the period when the “Sumerian problem” was discussed. At present nobody expects that craniofacial measurements can reveal the origin of the Sumerians, but the physical anthropologists can try to reconstruct the health status, diet, occupation, and many other individual and population characteristics, which may widen our modern insight into the living conditions of Sumerians and other ethnic groups inhabiting Mesopotamia in the past. The material base for such studies is still not well developed, but the constant growth of number of publications in the field allow us to be optimistic.

Bibliography

Anfruns J., Majò T., Oms J.I.

1996: *Los restos humanos del neolítico precerámico* [in:] “Tell Halula (Siria). Un yacimiento neolítico del valle medio del Éufrates. Campañas de 1991 y 1992”, ed. M. Molist Montaña, Madrid, pp. 161–173.

Bernhard W.

1993: *Anthropologie von Südwestasien*, “Rassengeschichte der Menschheit” 14, München.

Braun J.

1971: *Stosunki etniczne starożytniej Mezopotanii* [in:] “Mezopotamia”, ed. J. Braun, Warszawa, pp. 46–49.

Buxton D.L.H.

1925: *The Peoples of Asia*, New York.

Buxton D.L.H., Rice D.T.

1931: *Report on the Human Remains Found at Kish*, “Journal of the Royal Anthropological Institute of Great Britain and Ireland” 61, pp. 57–119.

Cappieri M.

1969: *The Mediterranean Race in Asia before the Iron Age*, Miami.

1970: *The Mesopotamians of the Chalcolithic and Bronze Ages*, Miami.

Clère J., Adeleine P., Ferembach D.

1985: *Étude anthropologique des mandibules de Cheikh Hassan*, “Cahiers de l’Euphrate” 4, pp. 265–273.

Coon C.S.

1949: *The Eridu Crania. A Preliminary Report*, “Sumer” 5, No. 1, pp. 103–106.

1951: *Race Concept and Human Races. Human Races in Relation to Environment and Culture*, “Cold Spring Harbor Symposia on Quantitative Biology” 15, pp. 247–258.

Cooper J.S.

1991: *Posing the Sumerian Question: Race and Scholarship in the Early History of Assyriology* [in:] “Velles Paraules. Ancient Near Eastern Studies in Honor of Miguel Civil on the Occasion of His Sixty-Fifth Birthday”, ed. P. Michalowski et al., “Aula Orientalis” 9, Ann Arbor, pp. 47–66.

Crawford H.E.W.

1991: *Sumer and the Sumerians*, Cambridge.

Dahlberg A.A.

1960: *The Dentition of the First Agriculturalists (Jarmo, Irak)*, “American Journal of Physical Anthropology” 18, pp. 243–256.

Driel G. van

2000: *Closer to Mesopotamia’s Proto-History*, “Bibliotheca Orientalis” 57, No. 5/6, pp. 493–509.

Ferembach D.

1959: *Le peuplement du Proche-Orient au Chalcolithique et au Bronze ancien*, “Israel Exploration Journal” 9, pp. 221–228.

1973: *L’évolution humaine au Proche-Orient*, “Paléorient” 1, No. 2, pp. 213–221.

Frankfort H.

1932a: *The Earliest Appearance of the Sumerians* [in:] “Actes du XVIIIe Congrès International des Orientalistes”, Leiden, pp. 62–63.

1932b: *Archaeology and the Sumerian Problem*, “Studies in Ancient Oriental Civilization” 4, Chicago.

Gelb I.J.

1960: *Sumerians and Akkadians in Their Ethnolinguistic Relationship*, “Genava” 8, pp. 258–271.

Gibson M.

1972: *The City and Area of Kish*, Miami.

1976: *By Stage and Cycle to Sumer* [in:] “The Legacy of Sumer”, ed. D. Schmandt-Besserat, Malibu, pp. 51–58.

Gragg G.B.

1995: *Less-Understood Languages of Ancient Western Asia* [in:] “Civilizations of the Ancient Near East”, ed. J.M. Sasson et al., vol. III, New York, pp. 2161–2179.

Hole F.

1989: *Patterns of Burial in the Fifth Millennium* [in:] “Upon This Foundation: The Ubaid Reconsidered”, ed. F.F. Henrickson, I. Thuesen, Copenhagen, pp. 149–179.

Ikeda J., Wada Y., Ishida H.

1985: *Human Skeletal Remains of the Jemdet Nasr Period from Tell Gubba, Iraq*, “Al-Rafidan” 5–6:1984–1985, pp. 215–233.

Ishida H.

1981a: *Human Remains from Hamrin*, “Al-Rafidan” 2, pp. 206–215.

1981b: *On the Human Remains in Hinrin and Other Sites in Iraq*, “Sumer” 40:1979–81, pp. 34–36.

Kappers C.U.A., Parr L.W.

1934: *An Introduction to the Anthropology of the Near East in Ancient and Recent Times*, Amsterdam.

Keith A.

1927: *Report on the Human Remains* [in:] R.H. Hall, C.L. Wooley, “Ur Excavations”, vol. 1, Oxford, pp. 214–240.

1934: *Report on Human Remains* [in:] C.L. Wooley, “Ur Excavations”, vol. 2, Oxford, pp. 400–409.

Kramer S.N.

1948: *New Light on the Early History of the Ancient Near East*, “American Journal of Archaeology” 52, pp. 156–163.

1963: *The Sumerians. Their History, Culture, and Character*, Chicago.

Landsberger B.

1944: *Die Anfänge der Zivilisation in Mesopotamien*, "Ankara Üniversitesi Fakültesi Dergesi" 2:1943–44, pp. 431–437.

1945: *Die geistigen Leistungen der Sumerer*, "Ankara Üniversitesi Fakültesi Dergesi" 3:1944–45, pp. 150–158.

Langdon S.

1920: *Sumerian Origins and Racial Characteristics*, "Archaeologia" 70:1918–1920, pp. 145–154.

Meiklejohn C., Agelarakis A., Akkermans P.A., Smith P.E.L., Solecki R.

1992: *Artificial Cranial Deformation in the Proto-Neolithic and Neolithic Near East and its Possible Origin: Evidence from Four Sites*, "Paléorient" 18, No. 2, pp. 83–97.

Meyer E.

1906: *Sumerer und Semiten in Babylonien*, Berlin.

Molleson T.

2000a: *The People of Abu Hureyra* [in:] A.M.T. Moore, G.C. Hillman, A.J. Legge, "Village on the Euphrates. From Foraging to Farming at Abu Hureyra", Oxford, pp. 301–324.

2000b: *The Human Remains* [in:] A.M.T. Moore, G.C. Hillman, A.J. Legge, "Village on the Euphrates. From Foraging to Farming at Abu Hureyra", Oxford, pp. 533–544.

Molleson T., Blondiaux J.

1994: *Rider's Bones from Kish, Iraq*, "Cambridge Archaeological Journal" 4, No. 2, pp. 312–316.

Molleson T., Campbell S.

1995: *Deformed Skulls at Tell Arpachiyah: the Social Context* [in:] "The Archaeology of Death in the Ancient Near East", ed. S. Campbell, A. Green, Oxford, pp. 45–55.

Molleson T., Comerford G., Moore A.

1992: *A Neolithic Painted Skull from Tell Abu Hureyra, Northern Syria*, "Cambridge Archaeological Journal" 2, No. 2, pp. 230–235.

Molleson T., Hodgson D.

2000: *The Porters of Ur*, "Isimu. Revista sobre Oriente Próximo y Egipto en la antigüedad" 3, pp. 101–118.

2003: *The Human Remains from Woolley's Excavations at Ur*, "Iraq" 65, pp. 91–129.

Molleson T., Jones K.

1991: *Dental Evidence for Dietary Change at Abu Hureyra*, "Journal of Archaeological Science" 18, pp. 525–539.

Molleson T., Jones K., Jones S.

1993: *Dietary Change and the Effects of Food Preparation on Microwear Patterns in the Late Neolithic of Abu Hureyra, Northern Syria*, "Journal of Human Evolution" 24, pp. 455–468.

O'Callaghan R.T.

1948: *Aram Naharaim. A Contribution to the History of Upper Mesopotamia in the Second Millennium B.C.*, "Analecta Orientalis" 26, Roma.

Oates J.

1960: *Ur and Eridu, the Prehistory*, "Iraq" 22, pp. 32–50.

Oppenheim A.L.

1977: *Ancient Mesopotamia. Portrait of a Dead Civilization*, Chicago – London.

Özbek M.

1979: *Étude odontologique des habitants préhistoriques du village de Mureybet (Syrie)*, "Cahiers de l'Euphrate" 2, pp. 120–128.

Penniman T.K.

1934: *A Note on the Inhabitants of Kish before the Great Flood* [in:] L.Ch. Watelin, S. Langdon, “Excavations at Kish”, vol. IV: 1925–1930, Paris, pp. 65–72.

Potts D.T.

1997: *Mesopotamian Civilization. The Material Foundations*, New York.

Rathbun T.A.

1975: *A Study of the Physical Characteristics of the Ancient Inhabitants of Kish, Iraq*, Miami.

1984: *Skeletal Pathology from the Paleolithic through the Metal Ages in Iran and Iraq* [in:] “Paleopathology at the Origins of Agriculture”, ed. M. Cohen, G. Armelagos, New York, pp. 137–167.

Roux G.

1969: *Ancient Iraq* [in:] “The Sumerian Problem”, ed. T. Jones, New York, pp. 134–138.

Rubio G.

1999: *On the Alleged “Pre-Sumerian Substratum”*, “Journal of Cuneiform Studies” 51, pp. 1–16.

Soden W. von

1960: *Zweisprachigkeit in der geistigen Kultur babyloniens*, “Genava” 8, pp. 300–301.

Sołtysiak A.

2003[2006]: *Anthropological Research in Syria and Iraq, Seasons 2001–2002. A General Overview*, “Studies in Historical Anthropology” 3 [in print].

Speiser E.A.

1930: *Mesopotamian Origins. The Basic Population of the Near East*, Philadelphia – London.

1951: *The Sumerian Problem Reviewed*, “The Hebrew Union College Annual” 23:1950/51, No. 1, pp. 339–355.

1969: *The Sumerian Problem Revisited* [in:] “The Sumerian Problem”, ed. T. Jones, New York, pp. 93–109.

Stewart T.D.

1959: *The Restored Shanidar I Skull*, “Smithsonian Report for 1958”, Washington, pp. 473–480.

1961: *The Skull of Shanidar II*, “Sumer” 17, pp. 97–106.

1977: *The Neanderthal Skeletal Remains from Shanidar Cave, Iraq: A Summary of Findings to Date*, “Proceedings of the American Philosophical Society” 121, No. 2, pp. 121–165.

Trinkaus E.

1977: *The Shanidar 5 Neandertal Skeleton*, “Sumer” 33, nr 1, pp. 34–41.

1983: *The Shanidar Neandertals*, New York – London.

Ungnad A.

1936: *Subartu. Beiträge zur Kulturgeschichte und Völkerkunde Vorderasiens*, Berlin – Leipzig.

Vertesalji P.P.

1989: *Were There Supralocal Cemeteries in Southern Mesopotamia in Late Chalcolithic Times?* [in:] “Upon This Foundation: The Ubaid Reconsidered”, ed. F.F. Henrickson, I. Thuesen, Copenhagen, pp. 181–194.

Wada Y.

1982: *Anthropological Studies on the Skulls of the Islamic Period, Unearthed in the Himrin Basin, Iraq*, “Osaka City University Medical School. Anthropological Reports” 42, Osaka, pp. 1–32.

1994: *A Discriminant Function for Sex Determination of Ancient Iraqis Based on Radial Measurements*, “Anthropological Science” 102, No. 2, pp. 149–158.

1998: *Morphological Assessment of Ethnic, Sex and Side Differences in the Human Radius Based on Intra-Regional and Side Ratios*, "Anthropological Science" 105, No. 4, pp. 193–210.

Wada Y., Ikeda J., Suzuki T.

1987a: *Tumor-like Lesions in a Human Skeleton from the Hinrin Basin of Iraq*, "Journal of Anthropological Society of Nippon" 95, No. 1, pp. 107–119.

1987b: *Probable Treponematoses in Human Skeletons from the Hinrin Basin of Iraq*, "Journal of Anthropological Society of Nippon" 95, No. 4, pp. 443–456.

Wierciński A.

1962: *The Racial Analysis of Human Populations in Relation to Their Ethnogenesis*, "Current Anthropology" 3, No. 1, pp. 2–40.

1971: *Antropologia starożytnej Mezopotamii* [in:] "Mezopotamia", ed. J. Braun, Warszawa, pp. 42–45.

1973: *Dziedzina etnogenezy w badaniach polskiej antropologii*, "Materiały i Prace Antropologiczne" 87, pp. 103–109.

1978: *The Processual and Structural Analysis of Palaeoethnic Affinities in the Historical Anthropology* [in:] "I Simposio de Anthropologia Biologica de España", ed. M.D. Garralda, R.M. Grande, Madrid, pp. 221–230.

Physical anthropology and the "Sumerian problem". 151. unbroken sequence of temples in Eridu and no traces of any invasion have been found in any excavated sites from the Ubaid and Uruk periods. It is likely that the Late Neolithic and Early Chalcolithic (Oates 1960:34-37). Joan Oates's scepticism gradually prevailed and the "Sumerian problem" started to be recognised as insoluble (cf. Rubio 1999:1). In recent years the studies on the early history of Mesopotamian populations has been more cautious, and there is general acceptance of Leo Oppenheim's opinion that "the relation between three categories, linguistic, racial and ethnic, is exceedingly complex in Mesopotamia and still far from being sufficiently investigated" (1977:48). PDF | On Jan 1, 2006, Arkadiusz Sołtysiak and others published Physical anthropology and the "Sumerian problem". Fifty-nine dental non-metric traits were scored using Arizona State University Dental Anthropology System on a sample of teeth from 350 human skeletons excavated at three sites in the lower middle Euphrates valley. The dataset was divided into six chronological subsets: Early Bronze Age, Middle Bronze Age, Early Iron Age with Neo-Assyrian period, Classical/Late Antiquity, Early Islamic (Umayyad and Abbasid) period and Modern period.