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The Study of Ancient Human Skeletons from Xinjiang, China

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Xinjiang is one of the main areas of contact and movement between the Eastern and Western races of the Eurasian continent. It is also an important area of the ancient "Silk Road" going to Central Asia. Therefore, the physical anthropological study of the racial characteristics of the ancient populations in this area is an important aspect of tracing the modern racial origins of the people of Xinjiang and the Central Asian region.

Between 1920 and 1940, only three foreign scientists published completed research in this area. They are: Arthur Keith of England (1929), Carl-Herman Hjortsjö and Ander Walander of Germany (1924) and A.N. Iuzefovich of the USSR (1949). A total of twenty skulls were described. Five came from the northern part of the Taklamakan Desert and Keith thought they characterized the "Loulan racial type." Eleven skulls were collected by Sven Hedin from near Luobubo (Lopnor) in 1928 and 1934, and have been subdivided into three groups (Nordic, Chinese, and Alpine) by Hjortsjö and Walander. The remaining skulls also came from the Luobubo (Lopnor) area and exhibit Mongoloid characteristics. Iuzefovich considered these to be of Tujue (Turkish) origin (Keith, A., 1929; Hjortsjö, C.H. and A. Walander, 1942; Iusefovich, A.N., 1949).

It should be pointed out that all the materials mentioned above were recovered by Western explorers who did not make systematic archeological excavations. The twenty skulls came from nine different localities which are all poorly dated, so it is very difficult to discuss the racial composition of the ancient population of Xinjiang according to these materials alone. Chinese scientists have conducted systematic excavations in this region since 1940. I have studied all the skeletal material housed at the Institute of Archeology of Xinjiang and analyzed the physical and racial characteristics of these human bones. The materials included about 274 skulls which were collected from nine ancient cemeteries in Xinjiang. The cemeteries range in age from about 1800 B.C.E. to 300 C.E.

The distribution of these cemeteries (Fig. 1), their precise age, and the racial morphological characteristics of the skeletal material will be described as follows:

(1) The Gumugou cemetery of the lower reaches of the Kongque River

The cemetery is situated on the dunes of the second terrace of the northern shore of the lower reaches of the Kongque River, about 70 km. east of the dried Luobubo (Lopnor) Lake. Chinese scholars have different opinions about its age, but most of the C-14 dates are around 3800 years B.P. (Wang Binghua, 1983). If we accept this fact, then it is possible that the cemetery was in use during the Bronze Age. A field team from the Institute of Archeology of Xinjiang has excavated 42 graves and recovered 18 skulls (11 male and 7 female). Average morphological characteristics of these skulls are: elongated, narrow, and high cranial vault, with relatively low and wide facial dimensions and strongly projecting nasal bones. The superciliary arc and glabella projection of the males are very strong, with rectangular orbits and broad nasal aperture. The facial projection is clear in transverse plane and weak in sagittal plane. The occipital region is circular when viewed from behind and the obelion-lambda region is flattened (Han Kangxin, 1986b).

To sum up, these skulls have definite Western racial characteristics. The homogeneity between individuals also is clear. In consideration of the synthetic character mentioned above, they seem to show some primitive features which have collectively been called "Proto-European type" by some anthropologists of the former USSR in the past. Racially, they are close to the populations of the Bronze Age of southern Siberia, Kazakhstan, Central Asia, and even the grassland areas of the lower reaches of the Volga River (Han Kangxin, 1986b).

(2) The Alagou cemetery, Tian Mountains

This cemetery is located in the Alagou area of the southern margin of the Turfan basin. There are three different patterns of graves in this cemetery. The human bones were collected from a group grave dug out of large gravel. Their age is about 2700-2000 B.P. Among 58 skulls, 33 belong to males and 25 to females. Most of the skulls are possessed of Western racial characteristics, but also show some variation. For example, one subset of them resembles the East Mediterranean type with long and high cranial vaults (Indo-Afghan), other crania are somewhat broader or round headed and similar to that of the Pamir-Ferghana, the remainder of the crania combine features of both of these groups. Nasal apertures are typically high and narrow as are the orbits, but facial projection in the transverse plane is identical with that of the Pamir-Ferghana group. This may indicate that there was some mixture between the two different European races (Han Kangxin, 1993).

In addition, a few of the skeletons in the group graves of Alagou are of mixed Mongoloid and European ancestry (Han Kangxin, 1990).

(3) The Yanbulak cemetery, Liushuquan, Hami

This cemetery is situated on an earthen hill called Yanbulak nearby Liushuquan, Hami region. The rectangular graves were lined with adobe bricks made of sand and earth from the Gobi. Their age is about 3100-2500 years B.P. Most of the graves have been disturbed and bone preservation is poor. About 76 graves have been excavated but only 29 complete skulls were obtained. Twenty-one of them are of clear East Mongoloid character, eight can be classified as belonging to the Western race. The general morphological character of the skulls classified as Mongoloid are elongated with fairly wide orbits and close to that of the East Tibetan populations. The skulls with Western racial character are close to that of the Gumugou cemetery of the lower reaches of the Kongque River in their morphology (Han Kangxin, 1990).

In a word, elements of Eastern and Western races co-existed in the ancient populations of the Hami region, but the former are dominant. According to the unearthed painted pottery, the ancient culture of the area bears a close relationship with that of the Bronze Age of eastern areas such as Gansu and Qinghai (Kokonor) (Han Kangxin, 1990).

(4) The east suburbs cemetery of Loulan

The cemetery is situated on the two high terraces of the eastern suburbs of Loulan. There are many utensils characterized by Han dynasty culture of the middle-lower reaches of the Yellow River among the funerary objects such as brocades, rough silk, silk floss, bronze mirrors, lacquerware, Wuzhu coins, etc. The date of this cemetery is rather late, about 1800 years B.P. (corresponding to the Eastern Han dynasty). Among six skulls from the cemetery five belong to males and one is that of a female. Only one skull shows Mongoloid characteristics and the rest possess clear European characteristics; elongated and high cranial vaults, narrow nasal aperture, high arched nasal bones, and high orbits. These characteristics are similar to that of the Saka population of the south Pamir within the former USSR about the sixth century B.C.E. In other words, they are close to that of the East Mediterranean in morphological character. One female skull with Mongoloid characteristics (such as flat facial skeleton, high and wide face and low nasal projection, broad cranial vault, and so on) differs from the other five male skulls in morphology (Han Kangxin, 1986a).

(5) The Shanpula cemetery, Luopu

This cemetery is situated at the southwest margin of the Taklamakan Desert. The shape of the graves in the cemetery is various: log coffin burial, boat-shaped wooden coffin burial, combined coffin burial and large group graves with more than 100 persons. The human bones including 56 individual skeletons came from the latter kind of graves. According to the associated archeological utensils from these graves, the culture of the population occupying this area has a close relationship with that of the middle-lower reaches of the Yellow River. The age of the large group graves is about 2200 years B.P. (C-14). Professor Shao Xingzhou (1988) thought that the human bones from Shanpula mainly possessed Mongoloid characteristics with certain European features as well. But I believe that they are mainly of European character (elongated and high vault with narrow nasal aperture) and actually are close to that of the East Mediterranean and also similar to that of the ancient Saka of the south Pamir within the former USSR (Han Kangxin, et. al., 1987a; Han Kangxin, 1989).

(6) The Xiangbaobao cemetery, Tajik

The cemetery is located in the Tajik autonomous county, Tashkurgan (Tashikulahan), Pamir plateau. There are two kinds of burials: cremation and underground burial. The age of this cemetery is about 2800-2500 B.P. (C-14 dating of coffin wood). Only one skull was collected and this has strong Western characteristics, for instance, small frontal slope, unpronounced superciliary arc and glabella projection, marked nasal projection, narrow nasal aperture, strong facial projection, and narrow facial dimensions. These characteristics are close to that of both the modern East Mediterranean and the ancient Saka of the south Pamir within the former USSR (Han Kangxin, 1987c).

(7) The Tudunmu cemetery, Zhaosu of the upper reaches of the Yili River

"Tudunmu" means a kind of tomb with the shape of an earthen mound (kurgan). They are distributed in Xiatai, Boma, etc. of the Zhaosu region, near the boundary between China and Kazakhstan. The age of this cemetery is about 2400-1800 years B.P. according to the geographical position, unearthed utensils, and C-14 dating. Some archeologists consider that the human remains from the cemetery belong to the ancient Saka and Wusun. Most of the 13 skulls (seven male and six female) come from the Wusun graves and only two from the Saka, but they are all similar in morphological characteristics. These skulls have shortened cranial vaults and 11 among them can be classified as Western Caucasoid. The male skulls are more robust, with middle degree of profile angle of the frontal bone,

pronounced projection of the superciliary and glabella region, deep nasion depression, higher and middle degree of width of facial bones, middle degree of facial projection of transverse plane, moderately deep suborbital fossa, mostly with wide orbits and strongly projecting nasal bones. The nasal spine has a moderate level of projection, the lower margin of the piriform aperture is anthropine in form and of average breadth. There exist clear variations between individuals, but in general they bear a resemblance to that of the Pamir-Ferghana, the latter having broad cranial vaults without strong Western racial characteristics. Two female skulls show obvious Mongoloid characteristics, perhaps a mixed type of the two races. Most of the skulls from the cemetery, as far as their morphological type is concerned, bear analogy with that of the Saka and Wusun populations in Central Asia, but differ from that of the Ancient Saka of the Mediterranean type with elongated and high cranial vaults in the south Pamir within the former USSR (Han Kangxin, et. al., 1987b).

Up to now, no paleoanthropological materials of lithic age with conclusive evidence have been discovered in the Xinjiang area. For certain cultural remains referred to by some scientists as being of lithic age, there exist a good deal of queries. So far as age is concerned, some of these cultural remains are younger than previously thought. Thus, before reliable materials of lithic age are found, we temporarily suppose that this area is not included in the scope of origin of *Homo sapiens*. Based on the analysis of the materials of seven cemeteries mentioned above, it can be indicated that the source of racial morphological characteristics of the ancient population in Xinjiang is not unitary (Fig. 2). For example, there are at least three branches of the Caucasoid race and not merely one type from the Mongoloid race. Consequently, their emergence and distribution in Xinjiang as well as origin of typology cannot be completely the same. The racial composition of the modern population of Xinjiang is closely related to this biological background of complex racial origins (Han Kangxin, 1985, 1991).

The following inferences can be made according to the recently available information:

At least by the early Bronze Age of this area, Western racial elements with primitive morphological characteristics had entered into the Luobubo (Lopnor) area. Their physical character is close to that of the ancient populations of Central Asia (including Kazakhstan), southern Siberia, and the Volga River drainage basin with the boundaries of the former

USSR. As far as their racial origins are concerned, they have a direct relationship with the ancestors of the analogous Cro Magnon (*Homo sapiens*) type of late Paleolithic east Europe. Such type of late *Homo sapiens* was also found in the Voronezh region of the Don River drainage. The morphological character of these skulls is apparently similar to that of those skulls from the Gumugou cemetery of the Kongque River, but more primitive than the latter.

Several centuries B.C.E. or a little earlier, other racial elements close to that of the East Mediterranean in physical character entered into the western part of Xinjiang from the Central Asian region of the former USSR. Their movement was from west to east (Xiangbaobao, Tashkurgan, Shanpula-Luopu, Loulan cemeteries). In other words, some of them gradually moved along the southern margin of the Tarim Basin to the Lopnor area and converged with the existing population in the region. This may shed some light on the origins of racial variation in the Loulan kingdom. In addition, it is also possible that some Mediterranean elements crossed to the Tian Mountain region along the northern margin of the Tarim Basin and mixed with the previous population (for instance, as in the Alagou cemetery). It is helpful for understanding the inferences drawn above that the human bones discovered in the Neolithic graves of the Central Asia region of the former USSR (such as Anau of Turkmenistan about 6000-5000 years B.P.) belong to the Mediterranean racial type and the ancient Saka bones from the south and southeast parts of the former USSR (the Pamirs, about 6 centuries B.C.E.), which are adjacent to Xinjiang, belong to the same racial type. All the anthropological materials mentioned above seem to indicate that the opening of the ancient "Silk Road" from Xinjiang to Central Asia supported an eastward migration of the early Mediterranean population of Central Asia across the Pamir plateau (Fig. 3).

Several centuries B.C.E., or perhaps earlier, some Western racial elements (for example, shortened and high cranial vaults) emerged in the upper reaches of the Yili River and Tarim Mountains (for instance, Zhaosu and Alagou cemeteries). How did this racial element form? It is not obvious. Some scientists believe that they developed from the Proto-European with a change in cranial morphology to a more shortened vault, with the addition of some Mongoloid features. But it is not certain what Mongoloid elements were involved. Some scholars have argued that it is the result of a mixture of Proto-European and Mediterranean racial elements. How far these people spread into Xinjiang and the extent of the distribution of this racial element are the subject of continued research.

The earliest time of emergence of the East Mongoloid population in Xinjiang is still not clear. They appeared in this area in groups about 3000 years B.P. or a bit earlier (mainly in the eastern [N.B.] part of Xinjiang, for example, the Yanbulak cemetery,

Hami). They were also found in cemeteries farther west but highly scattered and in small numbers. Only about 10 percent among the 274 crania described in this report are Mongoloid in morphology. Most of them have elongated and high cranial vaults with a narrow face and are not representative of the typical continental Mongoloid skull with a broad cranial vault and facial dimensions. It can be inferred according to these phenomena that until at least several centuries B.C.E. the eastward movement of the Western race to Xinjiang was more rapid than the western movement of Mongoloid people. Both the scale and rate of the former were greater. A branch among them had already appeared in the Hami area of eastern Xinjiang about 10 centuries B.C.E.; the time of large scale westward movement of Mongoloid peoples may not have begun until the Han dynasty. This is in accord with written records about the tide of westward movement of Xiongnu (Huns) and Tujue (Turks).

According to studies of Chinese archeologists, the ancient culture of Xinjiang was deeply affected by developments in neighboring regions, such as Central Asia, Kazakhstan, Southern Siberia, and the Altai as well as Gansu and Qinghai of China (Shui Tao, 1993). The routes by which various cultures crossed ancient Xinjiang coincide with those by which populations of different races entered the region (Fig. 4).

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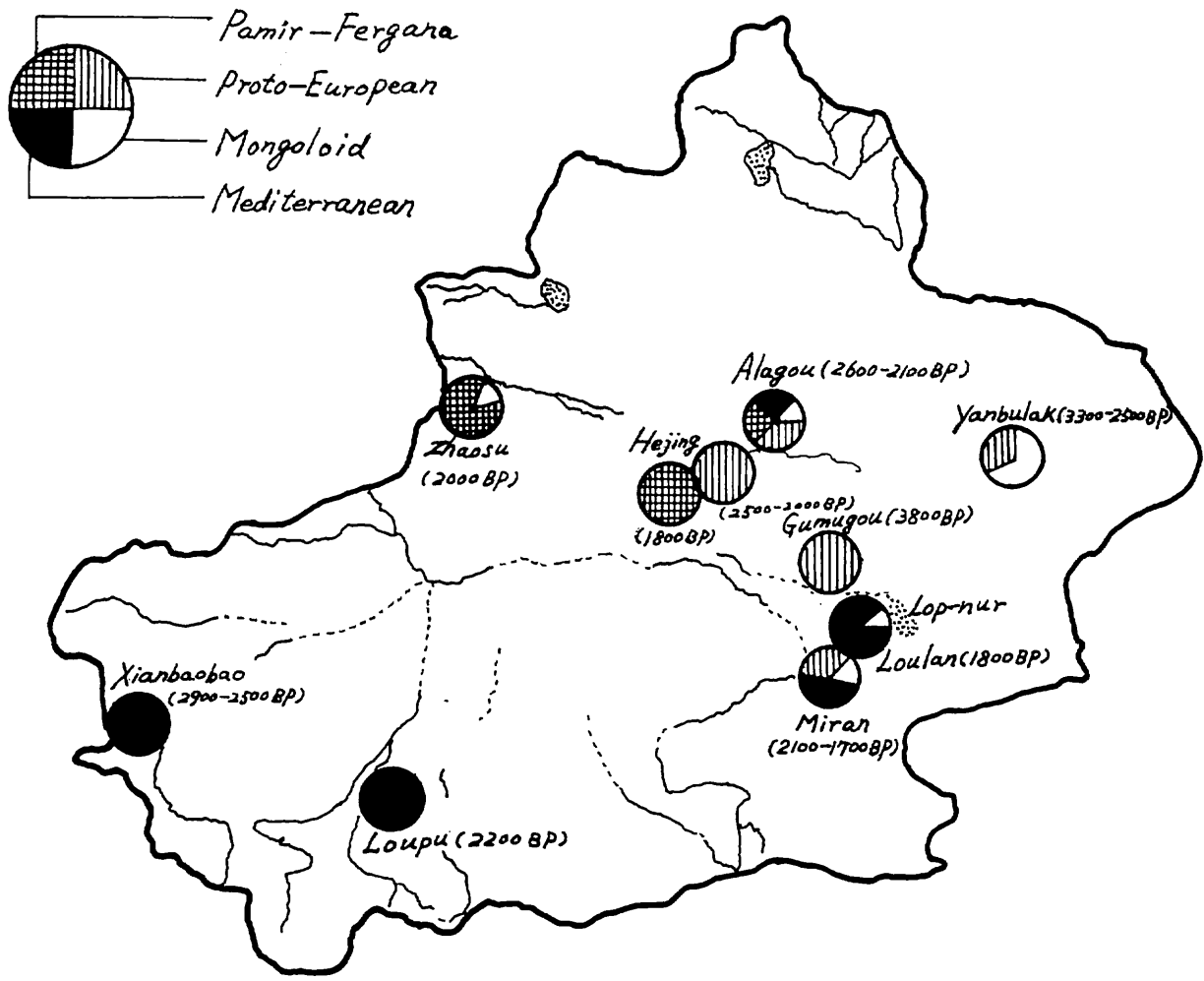


Fig. 1 Localities of human skeletal remains and proportion of racial elements.

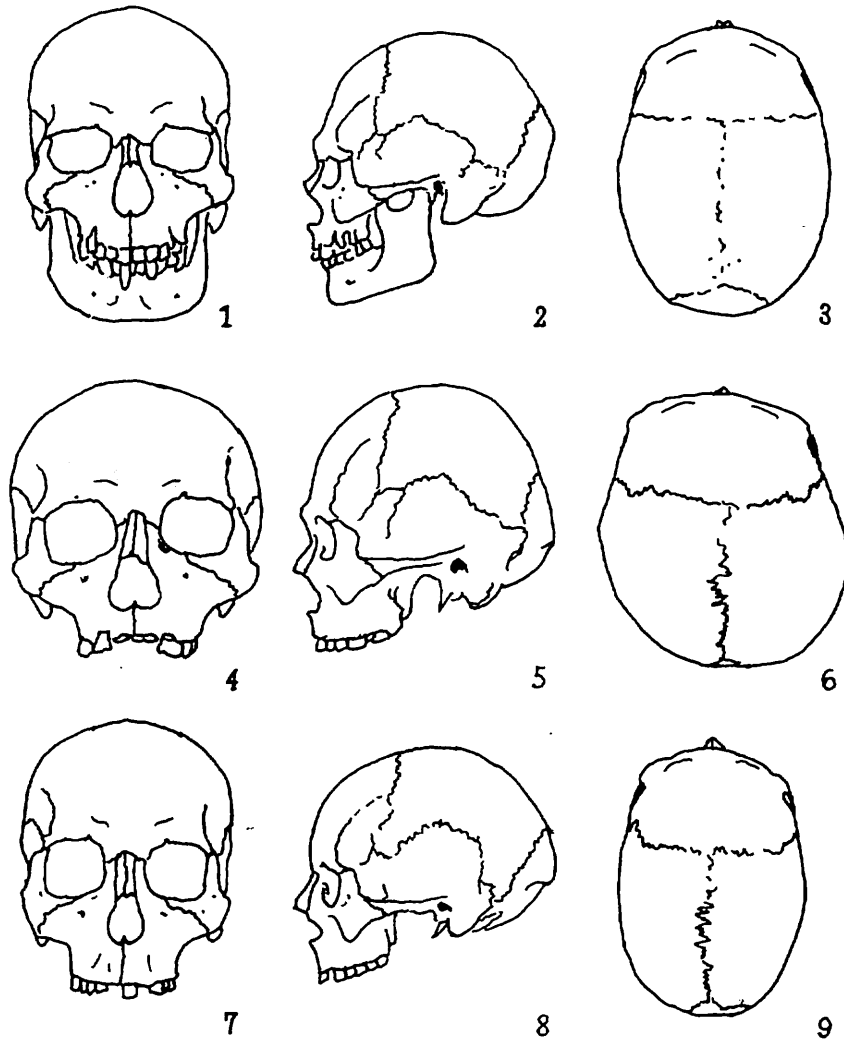


Fig. 2 Different types of Europoid skulls from Xinjiang:

1-3 Proto-European type (Gumugou)

4-6 Pamir-Ferghana type (Zhaosu)

7-9 Indo-Afghan type (Loulan)

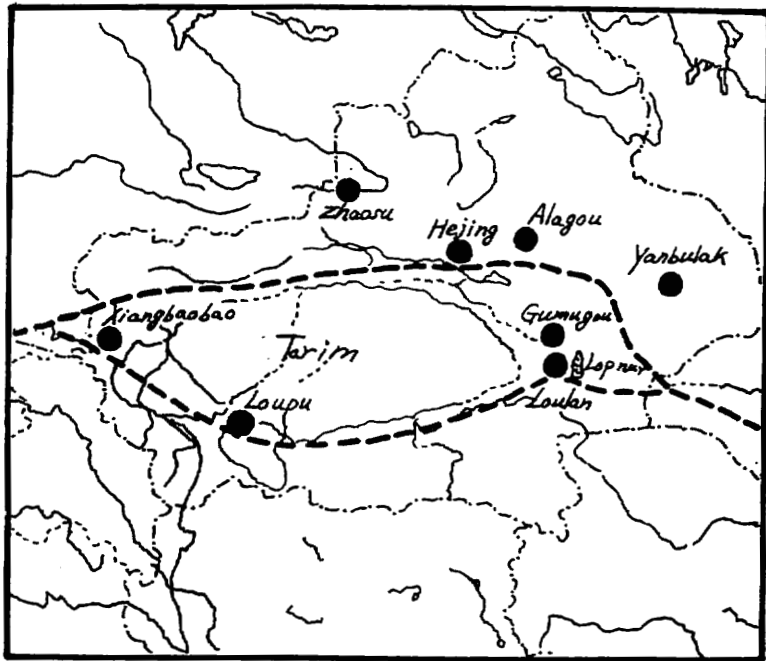


Fig. 3 Sites of Bronze Age and Iron Age skeletal remains in relation to the "Silk Road".

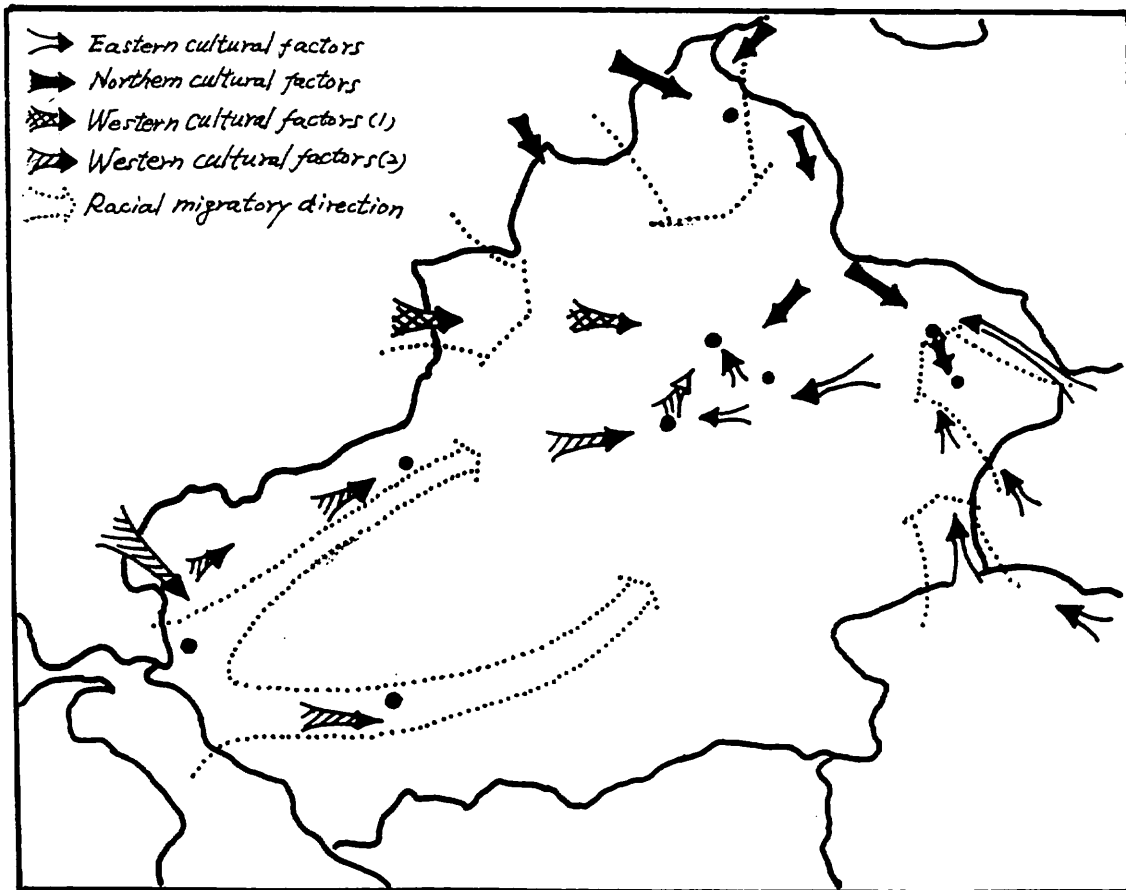


Fig. 4 Neighboring ancient cultural and racial influences in Xinjiang.

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