

THE KARASUK CULTURE AND ITS SOUTH-EASTERN AFFINITIES

BY

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In 1945, Karlgren established that some types of weapons and tools from An-yang, dating back to the Yin Dynasty, re-appear in Suei-yüan and Siberia.¹⁾ The similarities are so frequent and so striking that a connection between them cannot be denied. If a series of important metal types are related, then the bearers of these objects must also be in some way historically connected. The only question is: what kind of relation existed between »Yin-time China and the Nomad culture of Suei-yüan and Siberia»?²⁾

We must remember, moreover, that Siberia³⁾ and Suei-yüan differ from one another to such a degree⁴⁾ that the existence of affinities between these regions seems to be a problem in itself. Presuming that there could not be any relation between South Siberia and An-yang without contact with the regions of the Great Wall — which lies just in the middle — we are confronted with two special problems:

1. What are the relations between the high-culture of An-yang and the northern confines of China?
2. What are the relations between these »Nomads» of the northern confines of China and the inhabitants of South Siberia?

Karlgren thinks it is possible to establish a typological and chronological series originating in An-yang, passing on to Suei-yüan and then to the Minusinsk region. Certain types entered even into the Pontic Scythian culture.

By means of this typological series Karlgren concludes that China was the stronger partner, that the general »cultural current» flowed towards the North and Northwest and that the objects in the Ordos region and still more so those in Siberia are younger than those in An-yang. Karlgren's wording, however, is very cautious. He says that he only wanted »to show that certain features of the Nomad art can best be explained as being due to an influence from Yin-time China». But

¹⁾ BMFEA 17, 1945, pp. 101—144.

²⁾ It must be remembered that it is an open question whether there already existed »Nomad cultures» in the modern sense.

³⁾ In this case Altai and Minusinsk.

⁴⁾ Not only geographically — about 1000 km. of desert and mountains — but also prehistorically and probably in racial respects.



it is impossible to speak of single elements apart from the entire culture (therefore he must deal with the Hien-yün and Hün-yü). Loehr's treatise and Karlgren's answer demonstrate the problem in its whole extension.¹⁾

Karlgren's conclusion, however, is in opposition to the old tradition of European scholars who used to look upon the West, and consequently the Nomads of the Northwest, as the giver and upon China as the receiver. Karlgren has amply emphasized their carelessness in presuming what ought to be demonstrated.²⁾ Nevertheless, it will still be a long time before these scholars are convinced that the «current of culture» may go in the very opposite direction. This fact has been shown by Loehr's somewhat temperamental answer to Karlgren's interpretation.

But there already exist a number of more modern reports which were not available either to Karlgren or to his opponent.³⁾ These treatises deal with the Karasuk culture of Minusinsk, the northern pillar of the far-reaching cultural relations.

I now propose to give a short summary of these publications. Their strongest point is that they add the results of palaeoanthropology to the archaeological material. Of course, in the first place they contribute to the solution of the second partial problem, namely, the relations between Minusinsk and Sui-yüan. (I shall therefore set aside the first one). But they are also essential for the whole problem, as they put a limit to speculation, especially in chronology.

I. ARCHAEOLOGICAL MATERIAL.

First we shall look at the treatises published in western languages.

Up to the middle of the twenties Central and North European scholars were leading in the archaeology of South Siberia. Accordingly, the whole world was well informed. Gero von Merhart's book sums up all independent Western research, but unfortunately it also marks the end of it.⁴⁾

In his publication Merhart already takes into consideration that complex which is to-day called Karasuk, but he is unable to fix any date.⁵⁾

But soon afterwards the collaboration of the rest of the world came to an end. Subsequently Western research was entirely confined to compilations and information.⁶⁾ Notably two groups of scholars took note of Russian results; on the one

¹⁾ Loehr 1949 a and 1949 b. Karlgren 1949, p. 23 «Postscript».

²⁾ Similar discussions by Andersson 1943, pp. 282—291, and Creel 1937, p. 220.

³⁾ Loehr knew of them, but he is unfortunately mistaken in hoping to find a confirmation of his theories there.

⁴⁾ Merhart 1926. Bibliography up to that date.

⁵⁾ Merhart 1926, pp. 37—39. «Kurgane mit Platteneinzelgrab». He is speaking of a special tribe which has no part in the general development. In other words, he anticipates modern results.

⁶⁾ I do not except my own article.

hand Field, Prostov, Golomshtok and others¹⁾ who wrote in American journals, and on the other hand Tallgren and his collaborators in the ESA.²⁾

It was just at this time that Russian explorers succeeded in attaining decisive results, but as they were principally interested in local development and so-called »stadiality», their conclusions could not settle all questions for us.

A change occurred in the last few years before World War II. Then, at last, the Russian scholars could not help taking migration and diffusion into consideration. During this time, Tallgren's work was already approaching its end; only the American reports continued. But these are mostly lacking in illustration and criticism. Though they are precise in detail³⁾, they do not give a lively, well-rounded picture as do the works of Tallgren. So we are placed in the position of knowing names and sites without being able to operate with them or to form any idea of them. Gaul's treatise is simply the exception to the rule. Unfortunately it is based only upon articles of the »antimigrationistic stage» of Russian research.⁴⁾

After this short account, we shall now review the history of the exploration of the Karasuk culture as presented in eastern publications.

Teploukhov laid the foundation, distinguished the Karasuk culture from the rest of the finds and marked its place in relative chronology. It ranges between Andronovo and that complex which he called »Minusinsk Kurgan culture». This order has not met with any serious opposition since;⁵⁾ it is, moreover, supported by numerous transitional forms, at the beginning and at the end.⁶⁾ Teploukhov accordingly regarded it as a part of an inner development, being nevertheless aware of its south-eastern relationship. By comparing especially the forms of knives with the knife-coins of China of Chou time he confirmed the correctness of his relatively late dating (10th—8th c. B. C.)

During the following years, intensive excavations were carried out in the Minusinsk Basin⁷⁾, and it became known that in the Altai and in certain regions of Kazakhstan similar types were spreading⁸⁾ almost at the same epoch. Griaznov,

¹⁾ Golomstok, 1933. H. Field and E. Prostov, treatises in *Am. Anthropologist*, *Am. Journ. of Arch.*, *Am. Review of the Sov. Union*, *Southwestern Journ. of Anthr.* Besides these, American material by Ward 1948. English material is scanty but excellent (Childe, Russians publishing in »Antiquity»).

²⁾ Cf. Tallgren 1937 a, 1937 b, 1938. Of the others, in particular Salmony must be mentioned here.

³⁾ Sometimes not even that. Cf. Henry Field and Kathleen Price: »Review of Soviet Archaeology 1919—1945 in Historic Perspective» p. 221, where they deal with our subject. But who would guess that »Din-Din» is a mistake for »Din-lin = Ting-ling»? That »In» means »Yin»? Why should we need two authors, when neither of them recognizes well-known Chinese names which have been phonetically translated into Cyrillian letters?

⁴⁾ Gaul 1943. I am indebted to Prof. von Heine-Geldern for this treatise, and also for others which were not accessible in Vienna.

⁵⁾ Tallgren was sceptical, but later on he accepted name and dating. Cf. 1928 and 1938, pp. 121—128.

⁶⁾ Teploukhov 1926, 1927, 1929 a, and 1929 b.

⁷⁾ Kiselev 1949, p. 64. Survey.

⁸⁾ Griaznov 1927, 1930 a, 1930 b, Kartsov 1929, Rykov 1935. Levashova 1939. Survey by Kiselev 1949, pp. 87—92.

a brilliant excavator, consequently spoke of a «Karasuk culture of the Altai». A long series of forms transitional to the groups of western civilization could be established, but burial sites with typical Karasuk inventory were found as far west as Karaganda. Besides this, it was found that various Karasuk objects had spread still farther into the forests of the northwest.

Griaznov likewise tried to solve the problem by typological research¹). An analysis of his work shows that in 1941 he still believed in the chronology as well as in the derivations of Teploukhov. In this article he gives still further reasons in support of the assertions of Teploukhov. On the other hand, he is convinced, for example, that no foreign influences can be established in the whole history of socketed celts.

Kiselev followed another path²). He, too, made extensive excavations. He may be called the official successor of Teploukhov. For a long time he made no mention of any foreign influences, but he began to bring a completely new order into the «Kurgan culture». This means a fundamental difference between the conception of Teploukhov and his own, for his basis is not the development of the rite of interment but the typology of tools and weapons. He asserts neither more nor less than that collective tombs and single graves might be coeval. The whole difference lies in the social order³). By his new typology that curious empty interval between the Animal Style elements of Karasuk and those of the «Kurgan II»⁴) is eliminated. This new grouping found its expression also in a new name. Kiselev called the period of Minusinsk Kurgans «Tagar»⁵) (or «Tagarsk», after Lake Tagar and the isle of the same name). Besides this, he points out that, in the West, Late Andronovo forms with Seima décor continue almost to the beginning of the Scythian time. That shows that the presence of such forms in the Minusinsk Basin does not mean that they were already spreading in Karasuk time. They might have been accepted at the beginning of Tagar time, when the contact with the West was reinforced.

This is of vital importance for deciding the question of how strong the local element in Karasuk was. By this new sequence many of those types which were thought to be local in Karasuk must now be looked upon as having come from the West at a later period.⁶) But if the characteristic features of Karasuk were neither local nor related to the West, where else did they come from? Then it was that Kiselev finally began to take into consideration eastern affinities.

The correctness of Kiselev's opinion has been generally acknowledged in the

¹) Griaznov 1941. Cf. Engl. résumé pp. 270—271.

²) Kiselev 1929 a, 1929 b, 1933 a, 1937 a, 1937 b, 1938, 1949, pp. 62—108.

³) E. g. Kiselev 1949, pp. 152—154.

⁴) In Teploukhov's scheme «IV», reproduced by Golomshtok 1930, p. 320, Salmony 1935, pl. III, Gaul 1943, p. 172, cf. Gaul 1943, pp. 173—174. His deliberations on this point have lost their importance.

⁵) Gaul (1943 p. 166 foot-note) was mistaken in writing about an «(ill-defined) later 'Tagar phase' of the Kara Suk complex». He had not read Kiselev 1929 a and 1933 a.

⁶) Kiselev 1949, pp. 110—128.

meantime.¹⁾ It seems justified not only because it simplifies the Tagar complex, but because it is confirmed on two later occasions. Firstly, there was the Chinese exhibition in Moscow in 1940, where the Russian scholars could observe finds from An-yang.²⁾ This extended the horizon in an unexpected direction. Secondly, Kiselev undertook an »archaeological journey» to Northern Mongolia sponsored by the Academy of Sciences.³⁾ On this occasion he discovered so many identical forms in the museums that he could not but revise the old standpoints.

Post-war excavations in Minusinsk confirmed that animal sculptures already belonged to Karasuk and hinted once more at foreign relations.⁴⁾

Even now a good deal is not yet clear, but these reports have led up to a new idea, which I should like to present here.

I wish to set aside all regions of obviously secondary character, e. g. the Altai, which do not give us any information about the age, derivation and eastern affinities of the Karasuk complex. Our chief attention will be drawn to the *Minusinsk Basin*, where we have plenty of well-examined material, and where we find the types so concentrated that it seems to be the very heart of this culture in Siberia.

A. B U R I A L C U S T O M S.

Dwelling-sites are very rarely found intact, so that the whole work of exploration must begin with the graves. Stray finds have to be classified accordingly. That is why our description starts with the Karasuk cemeteries, of which nearly two dozen are known in the Minusinsk Basin.

Kiselev's survey is based on the following burial sites:⁵⁾

Askysz, excavated by I. P. Kuznetsov-Krasnoiarskii⁶⁾

Mochov on the Uibat, excavated 1900 by Levashova

Okuney, excavated 1926 and 1927 by Teploukhov near the Ninia river, excavated 1908(?) by Kuznetsov-Krasnoiarskii

One near the Beia river, excavated 1936 by Kiselev⁷⁾

Lugavskoie, excavated 1924 by Tugarinov⁸⁾

Krivinskoie, excavated 1928 by Kiselev⁹⁾

One near Lake Tagar, excavated 1894 by Adrianov¹⁰⁾

¹⁾ Chernetsov, 1947.

²⁾ Kiselev 1949, p. 85.

³⁾ Kiselev 1947.

⁴⁾ Lipskii 1949.

⁵⁾ Kiselev 1949, pp. 62—67.

⁶⁾ publ. 1889.

⁷⁾ publ. 1937 b.

⁸⁾ publ. by Teploukhov 1927.

⁹⁾ publ. 1929 b.

¹⁰⁾ publ. 1920, 1924, and OAK for 1894.

Bystraiia, excavated 1929, 1930, 1931 by Levashova and Kiselev¹⁾

Podkuninskaia, excavated by Levashova

3 burial sites near Tes, among these	} excavated by Kiselev ²⁾ 1929, 1931, and 1932
Ilinskaia gora and	
Georgievskaa gora	

Ust Tes

Dzhesoss, excavated by Adrianov³⁾

Syda

Ust Syda	} excavated by Kiselev ⁴⁾
Ust I Erba	

Kara-Suk	} excavated by Teploukhov ⁵⁾
Bateni	

Orak, excavated by Sosnovskii, 1927.

There is one cemetery to be added:

Near the town of Abakan, excavated 1946 by Lipskii.⁶⁾

Gaul has only reported on the finds of Kara-Suk and Bateni, Askysz, Lugavskoie and of the Lake Tagar. He cites a publication by Kiselev⁷⁾, but it is not contained in his material.

One burial site often consists of more than a hundred single graves, but only 290 graves altogether have been analysed in detail. The result, however, is still poorer as most graves were robbed at an early period. We can easily imagine how early robbing started, bearing in mind that there were practically no precious metals in the graves. The robbers were digging for the bronzes. But the inventory of bronze is small enough even in graves that have not been robbed, especially compared with that of the following (Tagar) period. Some centuries later it would not have been worth while digging for these objects. In the Tagar period, moreover, we see that the robbers knew very well where the richly equipped graves of men were situated, and they knew them, too, in Karasuk. We are thus led to believe that contemporaries robbed them. However, it seems rather improbable that all irregularities in the position of the skeletons should have been caused by robbers. Secondary interment is quite possible.⁸⁾ In any case, comparative statistical examinations cannot be made.

The graves of Karasuk are marked by a fence of rectangular slabs placed on the surface of the soil and put into the ground in a vertical position. In the

¹⁾ publ. by Kiselev 1937 a.

²⁾ publ. 1929 b and 1937 a.

³⁾ publ. 1902 and 1924 and OAK for 1894.

⁴⁾ publ. 1937 a.

⁵⁾ publ. 1927.

⁶⁾ publ. 1949.

⁷⁾ 1937 a.

⁸⁾ Kiselev 1949, p. 64.

northwest of Minusinsk, however, these stone fences are often erected in a circle, which is reminiscent of older forms from Afanasievo and Andronovo. This might mean that the influence of new elements was stronger in the southeastern region.

Smaller rectangles often occur round a larger one. In the centre of these fences, under a low mound, there lies a generally trapezoid pit clad and roofed with slabs of Devonian sandstone. Sometimes there is no other fence, but even then it is easy enough to recognize the graves. They lie so near to the surface that the plates of the stone cist stand out conspicuously. The skeleton lies extended on its back or slightly turned to the left side, with its head at the broader basis of the trapezoid.

Knowing this for certain, it is possible for us to form some idea of the orientation of the dead, even if we cannot derive anything from the bones themselves. The head is usually directed towards the east or east-northeast. Besides extended skeletons we also find flexed burials, i. e. the known form of the older graves of the same region.

As yet we cannot find anything »revolutionary» in the rite of burial; neither is there anything surprising about the number of persons who were buried in one and the same grave.¹⁾ Already before that time, single graves were predominant. Only occasionally was a child buried in the same stone chest. Very seldom a man and a woman are buried together. We sometimes find the graves of a male and a female lying symmetrically and surrounded by the same fence.²⁾

In any case we have no reason to think of a change in the social order, e. g. a change from matriarchy to patriarchy, as Russian scholars are inclined to conjecture.

I do not intend to give here more than a short outline, since Merhart, Teploukhov and others³⁾ have already sufficiently described the graves. I shall complete the picture on two points only:

Firstly, an approximate inner chronology of the Karasuk cemeteries can be fixed, though we have to consider local differences, e. g., in the north the cultural events often occur somewhat later; but it is certain that Ulus Orak, the »Iarki» (near Bateni), and especially Ust IERba are the oldest sites, like Krasnii IAR in the Altai. The latest are Bystraia, Ilinskaia gora and Askys. The rest range between these extremes.⁴⁾

Secondly, during the latest excavations a very peculiar thing was noted. In four cases, outside of the fence, in the north or at the north-eastern angle, a small pit has been found in the ground. It is laid out with three stone slabs which form an equilateral or isosceles triangle when viewed from above. It measures 12—20 cm. in the length, 12—15 cm. in height, the stones being 2 cm. thick. These stone cases were empty. What were these puzzling chests meant for?

In the course of Kuznetsov-Krasnoiariskii's excavations small cubical holes,

1) Nor does distribution of the burial sites differ greatly from that of Andronovo.

2) Kiselev 1949, pp. 65—67.

3) Merhart 1924 and 1925; Merhart 1926, pp. 37—39.

4) Kiselev 1949, pp. 75—86.

each of 50 cm. in length on each side, were found in the ground which did not contain anything but bronzes and pottery.¹⁾ Kiselev gives us a further hint. He states that the graves of children, which are, moreover, unusually numerous, are mostly situated near the north-eastern angle of the fence. In Tashtyk, a child's grave was found which was curbed in with timbers forming a triangle. A further, ethnological, affinity is reported of some small tribes of the Amur region, who bury miscarriages and afterbirths in small triangular stone cases like these even at the present day.²⁾

The inventory of the graves, which we shall now deal with, can be understood to be as follows: the dead were provided with clothes and food which they would need »on the road». In no case was any equipment for military or civil purposes in the other world given to them. This is proved by one characteristic feature: the few knives found in the graves are not near the dead bodies, but they are all found near the pots and with bones of animals.³⁾ They obviously served as »carving-knives», not as weapons. The dead were provided not only with meat, since we found bones of animals, but also with pulpy or liquid food in pots.

B. Pottery.

Vessels constitute the most reliable inventory. A grave may often contain a considerable number of them.

It is obvious that the form of the vessels differs completely from the Andronovo types.⁴⁾ (Pl. I; 7—11). The flat bottom has disappeared. All relationship with the culture of the »timber graves» of the Pontus are suddenly severed.

Wherever the typical form of the Karasuk grave is met with, we find vessels with rounded bottoms. Hardly any exceptions have been seen. The shape of the vessels is mostly globular, or, sometimes, irregularly napiform with straight medium-high collar. Sometimes the collar is slightly flaring, as we know it from the Andronovo vessels. Occasionally the vessel widens elliptically at the sides, the bottom is flattened, but there is no edge between side and bottom as in the vessels found in Andronovo. Other vessels are ovally elongated towards the bottom, recalling the pottery that is usually assigned to »ancient times», that is to say to Afanasievo.

The few exceptions can be reduced to two groups. On the one hand, vessels with flat bottom are found in graves which must be assumed to be the oldest, as is evidenced by the décor and technique as well as by the further inventory of metals and the position of the skeleton. They are most closely related to Andronovo. On the other hand, the flat bottom is known to exist on vessels that are judged to be the latest, next to Tagar (for reasons mentioned above), The

¹⁾ Cf. Gaul, 1943, p. 164.

²⁾ Lipskii 1949, pp. 79—81.

³⁾ Griaznov 1941, pp. 237—239.

⁴⁾ Kiselev 1949, pp. 78—82. Illustr. in: Teploukhov 1927, Kiselev 1929 b, Kiselev 1937 a.

Tagar time, indeed, brings a complete revival of the flat-bottomed vessels. Thus the »exceptions» really confirm the observation that the round bottom is a specific feature of Karasuk. But it is confined to the Minusinsk Basin, for the whole region of the Altai keeps its local flat-bottomed pottery besides the metal inventory which indicates Karasuk types. The south-eastern region (Suei-yüan) does not yet show anything similar to this development.

But there is another new feature in Karasuk which we can find also outside the Minusinsk Basin, namely in the contemporaneous Late Andronovo of the West. The collar-base is set off in a very distinct manner, sometimes sharply accentuated by ornaments. This probably means a parallel development in both regions, based on the common tradition.

As to the *o r n a m e n t a t i o n*, we have, on the one hand, vessels which show cog-like impressions in a comparatively primitive manner. Sometimes the surface seems to have been treated simply with a tuft of grass. One of the usual archaic patterns is the »pine tree» or »herring-bone» design. All these particulars are very well known from the earlier history of the upper Yenisei. We know them especially from the Afanasievo graves. When we discover, moreover, that this kind of ornamentation appears together with finds reminding us of the past in form also, we are tempted to speak directly of an Afanasievo Renaissance in Karasuk.

There are other vessels, besides these, with triangles, rhombi and transverse bands marked by a dentated stamp, proving clearly the continuation of Andronovo features.

Not all designs belonging to the same group are already met with in Andronovo graves of Minusinsk. An entire series of these designs is found exclusively outside this region, in the Late Andronovo of the West,¹⁾ for example, the distinctly marked collar-base, or even a zigzag line circling the pot in the equatorial height. Sometimes two zigzag lines are arranged one above the other, forming a broad band, and in other cases all these patterns are combined to form an intricate carpet-pattern. Here we see in a characteristic way that we stand at the eastern frontier of this kind of geometrical ornamentation.²⁾ Besides pottery, it is also to be found on bronze objects. Geometrical ornamentation seems to be a specific feature of the western group of the Siberian Bronze Age.

There is one point more, really the most elementary one, the *t e c h n i c a l* execution of the vessels. Here, the inheritance of the past is not so strong as in the ornamentation. We are rather reminded of the change in the form of pottery.

The method of manufacture is quite a new one: the vessels are hand-made and formed of very gritty clay. The outside is grey-brown, but the inside is dark with a bluish colour. The vessels are decidedly thin-walled, and their quality is superior to all preceding forms. Perhaps the sides were flattened with a hammer. At any rate they were diligently smoothened when still wet. It has repeatedly been

¹⁾ Griaznov 1927.

²⁾ In the Baikal cultures the ornamentation is entirely different.

suggested that the outer layer was a glazing made of some special compound. This would at least explain that some pots show a tendency to exfoliate on the outside.

In his «Mongolian Journey», Kiselev gives a hint that similar pottery can be found in the collections of Northern Mongolia. Nevertheless he explains in his later great treatise that he could not yet speak of any south-eastern affinities.¹⁾

As for the technique, there are two exceptional groups. Some vessels with their thick sides remind us of the past, some others found in late graves show some affinity with the Tagar period.

Consequently, we may say that in form and technique we meet characteristics which indicate a breach with the past. What may have been the reason?

It would be tempting to deduce from the return to the round-bottomed vessels a growing mobility of the population, i. e. nomad tendency. We are well aware, on the other hand, that the appearance of flat-bottomed pottery in Andronovo after the pointed pottery of Afanasievo had meant a more settled mode of living (with fixed fire-places?). This is now proved by the discovery of the remains of dwelling-sites belonging to Late Andronovo in the West. At any rate, Kiselev speaks of a fundamental change in the mode of living. In spite of this, we are not allowed to overestimate the force of this argument. But we shall see that it is at least an indication — the first indication of this kind.

Besides this, in one characteristic element of the form, namely in the marked collar-base, and in most of the ornamentation, we see the steadily growing development of the traditional Andronovo style.

The most surprising feature is what I called the «Afanasievo Renaissance». In the Minusinsk Basin the end of Afanasievo is usually dated 1700 B. C. That means that Afanasievo had already passed several centuries before. What are the reasons for this revival?

I should like in this connection to refer to an article by N. M. Komarova.²⁾ The author points out that a group of Afanasievo elements can also be isolated in Andronovo. She believes she can thus give them a chronological order. But these elements can be found in the next period as well. Consequently, we have to consider an inner ethnical order. Certain tribes of the Minusinsk region, possibly the descendants of the Afanasievo people, have always kept to these forms of ornamentation, while the immigrated Andronovo groups preferred other designs. Komarova's only argument against this is that the Minusinsk Basin would have been too small for such a subdivision. Surely this is not correct. Probably the Karasuk time witnessed a strengthening of the former population of the region. Or maybe this part of the population had lived outside the Minusinsk Basin in Northern Mongolia, where we also find Afanasievo features, and came back in a larger immigration. But we shall have to deal with this problem later on.

¹⁾ Cf. Kiselev 1947, p. 359 and Kiselev 1949, p. 82.

²⁾ Komarova 1947, pp. 57—59.

The last excavations after the war the results of which are known to me have made one more interesting contribution to the foreign relations of the pottery at Karasuk time.¹⁾ In a grave in the immediate vicinity of the town of Abakan a peculiar oval vessel has been found. (Pl. I:12). The diameters of its mouth were 11.5 to 13.4 cm. and the diameters of the bottom 14.8 to 15.5 cm. The points of a wooden fork were stuck in one of the lugs. This vessel is quite unique among the Karasuk finds. Neither in earlier nor in later times can any relation to it be found. But Lipskii states that there are specimens of exactly the same form among the vessels of the Chinese province of Chahar.²⁾

C. O r n a m e n t s.

Besides pottery, ornaments, that is to say all metal objects of clothing, belong to the characteristic inventory of the graves.³⁾

P e d i f o r m p e n d a n t s made of bronze are mostly found in considerable numbers. (Pl. II: 1—4). Twice they were met with in undisturbed graves in such an arrangement that they may be supposed to have been braided into the pigtail, which must have been laid over the breast.

In the west of Minusinsk this shape is very rare. Besides one specimen which is not quite certain, they are known only from the older cemetery of Tomsk. This means, perhaps, one argument more to show that they can be derived from an Andronovo type.⁴⁾ On the other hand, they occur in Tuva. Similar forms are also met with in Northern Mongolia (Kiselev). Whether the pendants of Sui-yüan are akin to them it is not for me to decide.⁵⁾ In his »Mongolian Journey», in which Kiselev publishes a remarkable form from Northern Mongolia (Pl. II:5), he was more convinced than he is later on that there are relations with Sui-yüan.⁶⁾

F i n g e r r i n g s have been worn on both hands. We know them exclusively from the Minusinsk Basin. They are open or overlapped, with bilobed signet (Pl. II:6—9). They appear not only in graves, but often among the stray finds.

B r a c e l e t s are to be met with in three types (Pl. II:13—15) made of spiral wire, or in the form of broad or narrow ribbons. The band-shaped ones are mostly ribbed, the broader specimens are, besides, ornamented with points or rosettes. Their distribution is the same as that of the most specific Karasuk types. They appear in the Altai as well as in the older cemetery of Tomsk.

¹⁾ Lipskii 1949, p. 78.

²⁾ *Archaeologia Orientalis A Series* vol. IX, pl. XXXIV. (*Arch. Orient.* is now not available in Vienna. The quotations are therefore only cited from Russian authors.)

³⁾ Description following Kiselev 1949, p. 76. List of finds p. 76—78.

⁴⁾ Teploukhov cited by Griaznov 1927, p. 204.

⁵⁾ Andersson 1932, pl. XVIII 9—11. Also Tallgren (1937 a, p. 86) compared these specimens to the Minusinsk pieces. Cf. also *Arch. Orient. B Series* vol. 1, pl. XV 1—16. Further: Arne 1933, pl. XII 1—14.

⁶⁾ Kiselev 1947, p. 359.

Spirally curved wires are distributed in the same way. They belong to the female temple ornaments and are found in situ.

Small bronze tubes belong to necklaces (Pl. II:16—20), as also do beads. They are very frequently found in the graves. Sometimes they are cylindrical, sometimes conical, smooth or ribbed. We know them already from Andronovo, and they appear still in Tagar time. Accordingly, they are also found in the whole western region of the Andronovo culture.¹⁾

Beads show a large variety of forms and are made of all kinds of material. There are cast bronze beads, biconical or barrel-shaped, and others made of flat metal plate. Both forms evidently come from Andronovo and therefore can also be found in the Altai. Massive beads are still to be seen in Tagar time. This is also the case in regard to beads made of mother-of-pearl. Sometimes small beads of lead also occur. Only in one instance was a piece of carnelian found. Cylindrical beads of white paste are extraordinarily wide-spread. Besides the characteristic distribution of Andronovo and Karasuk they are also to be met with in the Glazkovo graves of Cisbaikalia — another indication of the contemporary existence of all these cultures.

As to the numerous forms of ornaments of the Tagar time, imitations of the cowrie-shell (*Cyprea moneta*) are already seen in this period, though only in the most recent graves.

The Karasuk people often wear breast ornaments. These consist of a piece of leather over which small leather straps are stretched. These straps are covered with small clasps of ribbed bronze plate (Pl. II:21—24). In one case, 67 of these small clasps were arranged in eight horizontal rows. Another form of this breast ornament is a round copper(?) disk, from which small straps hang down, likewise covered with similar bronze clasps. Generally these tiny objects are most frequently met with among the mortuary gifts of the Karasuk graves. They appear, too, in the Altai. In the East they are found in the coffin graves of Cisbaikalia. There, together with a knife of Karasuk type, they form the basis for chronology.

Round buttons occur in various forms (Pl. II:28—30.). There are large and small ones, smooth forms and others with an elevated rim. Sometimes they are ornamented with drills radiating from the centre. Besides the Altai, they are also very often met with in the North Chinese borderland.²⁾ All we know of their purpose is that they constitute a part of neck-ornaments.

Very often ornaments are found consisting of a row of small spheroid segments. (Pl. II:31). They were fixed by a loop on the back or by small perforations. Some of them are massive, others are of bossed bronze plate. They form a part of the neck ornaments, or they are sewn on the clothes. Besides the typical western distribution (Altai, older cemetery of Tomsk), they are found in

¹⁾ Griaznov 1927, p. 205.

²⁾ Arch. Orient. B Series vol. 1, pl. XVII 10, 19, fig. 36, 37, 52, cf. also Andersson 1932, pl. XVI, Andersson 1943, p. 171 and pl. 159, Arne 1933, pl. VII 1—7, 11, 13—15.

great numbers among the Ordos bronzes.¹⁾ This is but the most prominent form among the ornaments of apparel which may be of varying shape: hemi-spheroid, ovoid, flat-ovoid, triangular, etc.

From an undisturbed find we know that the small bronze rivets belong to the covering of the feet (Pl. II:25—27). In one grave, rivets and small hollow tubes were found lying at the feet of a skeleton.

This survey of ornaments and metal accessories of clothing presents three groups which might easily be distinguished:

Forms that were already wide-spread in Andronovo and are still sometimes found in the Tagar period. They are met with far to the west beyond the actual Karasuk area.

Secondly, there are types which appear only in Karasuk. Some of them never occur elsewhere than in the Minusinsk region, or possibly in the nearest related regions (Altai and older cemetery of Tomsk).

But there is one more group that has no precedent forms in Andronovo, but which can be met with frequently in Suei-yüan in almost identical forms.

D. Weapons and Tools.

The objects we have dealt with so far — ceramics and ornaments — are found mostly in graves and must be regarded as a single group based on common burial customs, which makes dating a relatively easy task. Stray finds are merely of supplementary importance.

When we are dealing with weapons and tools, these burial customs cease to be an aid and become a positive hindrance. The dead are equipped for their journey to the other world only with clothes and are provided with food, exceptionally with knives. We therefore have to look for material elsewhere. We must have recourse to the rich museum collections, of which a part at least must belong to Karasuk. But which part?

Since the considerations which we have to make in separating the Karasuk artifacts from other finds are the same throughout, we shall now mention them before going into detail:

1. The normal method is to date the objects according to the few analogous burial finds.

2. In the following Tagar period, weapons and tools are actually placed in the grave, so that the entire metal inventory is known. Although these grave finds are abundant, there still remain certain bronze types of which we are aware only as stray finds. We may rightly assume that these types belong to Karasuk²⁾, especially if they show a far more systematical structure and characteristic shape than the often inarticulate Tagar types.

¹⁾ Arch. Orient. B Series pl. XV 22—26, 32—35.

²⁾ Andronovo types are known throughout the entire western steppe region. Consequently only Karasuk types remain.

3. There are furthermore »colonies» of Karasuk where tools of Karasuk type were used. But, according to another rite of interment in these stations, the objects are also to be found in the graves. Therefore metal implements of such burial sites probably belong to Karasuk, particularly if we cannot trace their origin elsewhere. The older cemetery of Tomsk is the most outstanding example.¹⁾

4. Identical features in décor of metal objects and ceramics or steles may also provide a hint for the dating of the tools.

5. Attempts have been made to classify the transitional forms between Andronovo and Tagar as Karasuk.²⁾ However, such an attempt involves a certain danger, for it assumes an uninterrupted development from Andronovo to Tagar forms. We also know that Late Andronovo types (in the west) reached as far as the Tagar time (in the east), that is to say, that Andronovo survived Karasuk.³⁾ The forms may also have been mixed on account of their geographical proximity and contact at a later date.

But in cases where several indications point in the same direction we may consider our conclusion as certain — and this we wish to emphasize.⁴⁾

After enumerating these fundamental principles, we shall now pass on to the material. It is improbable, from what we have said, that there would be burial finds of celts. We know, indeed, of only two specimens. One celt was found in a particularly rich grave on the Beia river.⁵⁾ (Pl. III:1). This one was doubtless an adze. The (rather poor) illustration and the suggestions which Kiselev makes allow us — aided by Griaznov's description⁶⁾ — to compare this object with two pieces reproduced by Tallgren.⁷⁾ The most striking feature is the orifice on the back.⁸⁾ Of this type, only three stray finds are known in the Minusinsk Basin, and two others in the Altai.⁹⁾ Kiselev states that these forms are unknown in the West, but they also appear among the Ordos bronzes, where, he also believes, we should seek the prototype.¹⁰⁾

His opinion that this is an eastern type is, he feels, confirmed by the fact that similar but longer celts are sparsely distributed toward the west. (Eight in Minusinsk, one in Tiumen, one in South-Russia).¹¹⁾

¹⁾ Survey in Kiselev 1949, pp. 87—88.

²⁾ Griaznov 1941, p. 237.

³⁾ At the Late Andronovo site of Alexseievsk there were found »archaic Scythian» arrowheads. Kiselev 1949, p. 57.

⁴⁾ Contra Gaul, who denies these »attributions», e. g. 1943, p. 169 and p. 176. We now have proof in respect of the most important object, namely the animal-head knives, that these attributions are correct.

⁵⁾ Kiselev 1937 b, p. 326, fig. 2.

⁶⁾ Griaznov 1941, p. 260 and pl. IV.

⁷⁾ Tallgren 1917, pl. II 5 a. 6.

⁸⁾ This caused some scholars to think of an implement for leather work.

⁹⁾ If not mentioned, the lists of finds of this chapter are cited according to Kiselev 1949, pp. 68—75.

¹⁰⁾ Arch. Orient. B Series vol. I XXXVI 14.

¹¹⁾ Kiselev 1949, p. 70.

Celts without an orifice but provided with a lug on the broad side are to be regarded perhaps as a later variant of the same function. They are more often found in the West. Griaznov believes that they belong to Karasuk, too, but he looks in vain for a local prototype. Thus he involuntarily confirms Kiselev in his foreign derivation.¹⁾

The second burial find is a small, unsymmetrical celt (Pl. III:2) which came to light from a very archaic grave in 1946, and which seems to have served also as an adze. But this specimen is not described and only inadequately reproduced, so that I cannot give details at present.²⁾

These adzes cannot have been the only implements of Karasuk. There must have been some form of axe, too. But the graves do not offer any further evidence on this point.

Griaznov tried to regard the Seima types as primary, according to method 5 above. From these he derived the »girdle-celts» bearing two lugs at the side, a form most akin to them. He classified it as Karasuk³⁾ (with a hint at method 4).

In opposition to this, Kiselev shows that no Seima celts existed in the Minusinsk Basin in Andronovo time. Wherever similar forms appear, they have been derived from outside at a later date. Following method 3, Kiselev points out that certain types were found at Basaikha and in the older cemetery of Tomsk. He thinks that they belong to Karasuk, forming the beginning of a later series of Tagar celts.⁴⁾ But these are likewise northern or northwestern forms. I do not intend to go into details here, for the material is not reliable enough for cultural comparisons. It would be easy to understand if celts, which are chiefly used for timber work, had been derived from a type properly belonging to the forest region.

On account of the close relationship between the Karasuk and Tagar cultures it would be surprising if the pick, the important weapon of South Siberia in later times, had no forerunner in Karasuk. There are, indeed, some stray finds (two in Minusinsk, but two on the Usa river in the south of the Sayan) the form of which is not known from Tagar kurgans and which may be the original type of a later evolution. Kiselev regards them as Karasuk (according to method 2). Two picks of this type were, moreover, found in the older cemetery of Tomsk (method 3), so that the conclusion might be right.⁵⁾ But where does this pick come from?

Tallgren tried to derive it from the West, since one find is known from the Urals. On the other hand, he kept in mind Chinese relations already in 1915. In this treatise a specimen is illustrated in which the edges taper directly from the socket, so that it resembles far more closely the eastern types.⁶⁾ (Pl. III:3—5).

¹⁾ Griaznov 1941, pl. I 9.

²⁾ Lipskii 1949, p. 77 and fig. 28/1.

³⁾ Griaznov 1941, pp. 253—254.

⁴⁾ Kiselev 1949, p. 47. Kiselev 1949, pp. 74—75 Or are the axes represented by Karlgren's class III to be classed here? cf. Karlgren 1945, p. 124.

⁵⁾ Kiselev 1949, p. 74. For one of these specimens see Tallgren 1917, p. 50, fig. 50.

⁶⁾ Tallgren 1916, p. 31. 1915 b, pp. 97—100.

Kiselev attempts to derive the pick from the Chinese Ko, forming a typological series, with a piece from Inner Mongolia as a bridge.¹⁾ He regards the Ko as the original form. This does not convince us, for it is not probable that the weapon he illustrates (with the «Hu» part) is really as old as he believes.²⁾ But we can say that the Siberian form does not differ so strongly from the Ordos specimens as it must have seemed to Karlgren.³⁾

Among the burial finds, square awls often occur. But they are spread too far over Siberia, in both space and time, so that they cannot lead to any conclusions as to their cultural relations.⁴⁾

As to knives, the situation is quite different. The specimens known from graves have no forerunners in the Andronovo inventories, where only daggers are found.⁵⁾ They do not differ entirely from the Tagar knives, but Tagar types are rather inarticulate. Karasuk knives are more bent and show a more definite structure.

There is a long series of stray finds showing the characteristics of these burial finds. There are further arguments also (i. e. the above-mentioned methods) indicating that these tools belong to Karasuk. Slightly schematising, Kiselev distinguishes three types of this peculiar series.⁶⁾

The first group contains the angle knives in particular. (Pl. IV:1). Handle and blade form an obtuse angle. They had not been reported from graves until 1946, when a burial find was published, with which we shall deal later on. But in the Minusinsk Basin there are 102 stray finds, to which two from the vicinity of Achinsk and four from the area of Krasnoyarsk may be added. These tools were already compared with the knife money of China by the first scholars who discussed them. Blade and handle are distinctly separate, mostly by some process. Another characteristic feature of these knives is a cap-like hilt-knob, sometimes also an animal head.⁷⁾

The second group consists of knives with the points curved back. (Pl. IV:2). Often, also, an angle is formed by blade and handle, as above. Karlgren characterizes this form as «S-curved».⁸⁾

Four burial finds are known of this type, three of them showing the angle. Besides these, there are 51 stray finds of the Minusinsk Basin. Their further distribution is one at Krasnoyarsk, one on the Tunka, one at Semipalatinsk, four in the Altai, thirteen at Chita. But these knives are also found in Northern Mongolia⁹⁾ and in

¹⁾ Kiselev 1949, p. 74. O. Janse 1935, pl. V, 13.

²⁾ Creel 1937, pp. 144—145.

³⁾ Karlgren 1945, p. 127, cf. Loehr 1949 a p. 136, who comes to the same conclusion.

⁴⁾ Kiselev 1949, p. 70.

⁵⁾ cf. Tallgren 1926, p. 209: «Dans les steppes, ce sont les poignards qui ont remplacé les couteaux.»

⁶⁾ Kiselev 1949, p. 70.

⁷⁾ Extreme forms of angle knives see Tallgren 1917, pl. V 9—12.

⁸⁾ Karlgren 1945, p. 128.

⁹⁾ Kiselev 1947, p. 359.

the Ordos region.¹⁾ Besides, they appear at An-yang.²⁾ In all these cases, there is a wide variation in the hilt-knob. Sometimes there are cap-pommels as we find them on the angle-knives, sometimes rings, also one ring after the other, or loops, or merely small holes in the handle. There also occur sculptures, which shall be dealt with later on.

An obviously late sub-group is formed by knives headed by a transverse rectangular plaque («console».³⁾ There is but one dated find from a grave on the boundary between Karasuk and Tagar. We know 21 stray finds from the Minusinsk Basin and there is the usual distribution outside it. Their occurrence in the older cemetery of Tomsk also hints at a somewhat later date.

In the third group we find inward-curving knives (Pl. IV:3), blade and handle forming a regular curve, so that the edges lies on the inner side. In function they do not vary much from the first group. The effect is attained by slightly different means. They also resemble the above-mentioned groups in design, showing a process between blade and handle, especially in the build of the handle and its terminal.

Three burial finds confirm the dating.⁴⁾ In the Minusinsk Basin 31 stray finds are known, and once more we find the usual distribution abroad: one in the Altai, one in the older cemetery of Tomsk, one at Ulan Khat, one in the vicinity of Kiakhta, four at Chita. Only ten specimens are reported by Kiselev to have been found in Northern Mongolia.⁵⁾ At An-yang, too, these knives are represented in large numbers and in very characteristic forms.⁶⁾

Here, too, a sub-group is to be added. There are flat knives showing the transition to Tagarsk forms. They also appear in burial finds from Minusinsk (1), the Altai (1), and the older cemetery of Tomsk. Besides at Minusinsk, stray finds are known from Semipalatinsk. In the East the distribution of this type is very limited. This confirms what was already suggested above: that this type represents a Western variant.⁷⁾

Hence we may draw the following conclusions:

The knives show a typological relationship and transitional forms.

Direct prototypes cannot be found in the Andronovo complex.⁸⁾

¹⁾ cf. Karlgren 1945, p. 127 and Nos. 206, 207, 209, 210, also Andersson 1932 3, 4, 7. Arch. Orient. IV/4, 5, 6, V/1, VI/4, 5, 6, 8, 10, 11, IX/8, B ser. vol. I, XLI/4, XLIII/1, 3, 4, 6, 8, 9.

²⁾ Karlgren 1945, almost without exception Nrs. 146—173.

³⁾ Kiselev 1937 a, p. 165; 1949, p. 72.

⁴⁾ Kiselev 1949, p. 72.

⁵⁾ According to Kiselev: Arch. Orient. B ser. vol. I: IV/23, V/4, 6, 7, VI/7, XVI/3, 6—11, XLII/11, XLIII/5, 7, 12, 16; Kiselev 1947 p. 359 fig. 2 g; Andersson 1932 V/1.

⁶⁾ Karlgren 1945, nrs. 164—170, 174—179.

⁷⁾ Kiselev 1949, p. 72.

⁸⁾ There would be but one possibility, viz. within that group which is superficially called «sickles»; cf. Kiselev 1949, p. 56, but neither are these forms akin to them.

Specimens that are of a well-defined design seem to be the oldest. At any rate, flatter and more inarticulate pieces belong mostly to later sub-groups. In the Tagar period distinct forms are totally dissolved on the knives (Pl. IV:4—8), whereas a clearly planned design remains on the daggers.¹⁾ These daggers seem to have been given the representative functions. It thus seems fairly probable that the fully developed form had already been accepted by the Minusinsk region, here forming the primary type.

There is still one peculiarity of these knives to be discussed:

Knives of exactly the same design as that mentioned above sometimes have an animal head terminal. (Not all knives of the Minusinsk Basin published by Karlgren belong to this group. Specimens such as No. 231 are certainly Tagar.) According to this typological characteristic the following knives may be classified here in the first place:²⁾ (Pl. V:1—5.)

1. Knife with an elk's head from the village of Mariasovo (Uzhursk area),
2. Knife with a bullock's head from the village of Krasny IAr, near Abakan,
3. Knife with a sheep's head from the village of Bellyk (Irdinsk area),
4. Knife with a ram's head, also from the vicinity of Ulus Krasny IAr, near Abakan,
5. Knife with a sheep's head without any further indication, in the Minusinsk museum,

unfortunately all of them stray finds.

Kiselev says that the small sculptures themselves reveal that they cannot have been made in Tagar time. They show a »fresh naturalism». Neither the typical fantastic features nor that form of distinct stylization which is so pronounced a feature of the later specimens appear on them. There is no fixed scheme, as is usual in the work of a specialized craftsman. (Such a regular handicraft can be accepted in the case of the Tagar specimens, which bear something like »trade-marks»). In Karasuk there is no perforation of the eye or of the nostrils, no clearly defined contours of the ear, nor circular endings. There is not yet any hint of the »animal enroulé». Other knives showing these primitive-realistic sculptures are of an inarticulate form; they are, therefore, thought to belong to a somewhat later date.³⁾ Unfortunately, this conclusion contains a considerable simplification⁴⁾, but on the whole Kiselev may be right.

One more consideration leads to the classification of the animal head terminal in Karasuk. We have already seen that the Yenisei knives appear as fully developed and show the same variety of forms as is known from the Ordos region. The animal head terminal belongs doubtless to the forms of Ordos knives.⁵⁾ It must be even

¹⁾ Merhart 1926, Tafel IV, V, VIII render typical Tagar knives.

²⁾ Kiselev 1949, pp. 101—107. 1. = Karlgren 1945, nr. 234, 4. = Karlgren 1945, nr. 229 (233), 5. = Karlgren 1945, nr. 237.

³⁾ e. g. Karlgren 1945, Nr. 232.

⁴⁾ The Yin-time daggers (Karlgrén 1945, Nrs. 182 a. 183 on Pl. V:10) i. e. very ancient forms, are strongly stylized.

⁵⁾ Salmony 1933, pl. XXXVI 3, 4, 5.

very old here, as the animal head knives of An-yang suggest.¹⁾ If all the forms of Ordos knives appear in the Minusinsk region, why should the animal head terminal not have come with them? Animal heads are, finally, a relatively rare kind of adornment, somewhat accidental within a large group. We have to discuss the whole series of knives.

Fortunately, for some months past we have been in possession of definite and final proof. In 1946 a large angle-knife was found near the town of Abakan in one of the oldest graves containing Andronovo-like pottery belonging doubtlessly to Karasuk. The hilt terminal is formed by a characteristic ram's head.²⁾ (Pl. V:7—8.)

Still another form of terminal in «Animal Style» is wide-spread in the Tagar complex. This is the standing animal. Nearly all stray finds³⁾ of this kind belong almost certainly to that period. Kiselev, however, states that there has been found during the excavations at Lugavskoie a knife the handle of which was crowned by a standing animal. This should prove that that type also goes back to Karasuk.⁴⁾ But the one reproduction is as miserable as the other, so that no commentary is possible. The fact that it is represented outside Minusinsk at Seima, Turbino and Irkutsk might rather hint at an early beginning of this type. But we shall discuss this question later on. Whether this type is equally old south of the Gobi cannot be decided so long as no data in this respect are recorded.

It would simplify the problem if we knew the purpose of these knives. The lug that is frequently found near the terminal shows that they were worn on a strap. Some of them have certainly served as «carving-knives».⁵⁾

We shall now deal with the problem of the daggers — a problem because not a single burial find is in existence. Of course, this is not surprising, for there are no weapons in the Karasuk graves. We have, therefore, to look for other dating arguments.

There is, indeed, a certain group of finds which are not to be found in Tagar graves.⁶⁾ As to the daggers that belong to the regular equipment of warriors, the Tagar graves reveal the entire series of Tagar development, and this affords very convincing evidence. There are, moreover, daggers similar to that found in the older cemetery of Tomsk (method 3). They resemble the Karasuk knives in certain features (method 5). The guard is only weakly expressed; it is as broad as blade and hilt and only separated by two incisions from the blade. The handle is slotted and shows two or three crossbars on the back. The terminal is sometimes shaped

1) Karlgren 1945, Nrs. 174—179.

2) Published by Lipskii 1949, pp. 77—78 fig. 28/3.

3) E. g. Tallgren 1917, pl. IV 14, 15.

4) Kiselev 1949 p. 102. If the finds are compared, it becomes obvious that this knife is the same as that in Teploukhov 1927, XI:36 = Gaul 1943, XVII:36 = Kiselev 1949, XXI/61.

5) Large and heavy curved knives must, of course, have served another purpose. Some knives show affinities to European razors. Were they shaving-knives — for shearing sheep?

6) Kiselev 1949, pp. 72—74.

into a ring, sometimes it is formed by a cap-pommel — very similar to the knives — sometimes even a jingle occurs.

A very archaic specimen related to this group is reproduced by Tallgren.¹⁾

The distribution is the usual one: Minusinsk: 12, Semi-palatinsk: 3 (slightly different forms), older cemetery of Tomsk: 2, Transbaikalia: 2.

Daggers have been known in the Minusinsk Basin since the earliest times, but the road from the Andronovo form to this one is rather a long one. Loehr used the specimen published by Tallgren to show a transition²⁾ (Pl. VI:5), but this piece is isolated. It might easily be conceived of as a mixed form. It could be explained as being an imitation of a Karasuk dagger by some one who only knew how to make Andronovo weapons, as we have a simple archaic dagger from Transbaikalia, the hilt of which is attached to the blade forming an obtuse angle, such as is usually the case on knives only.³⁾

There are certain daggers of Andronovo which show a handle formed by two »pillars» (Pl. VI:11), but this type is of too late a date to be possibly regarded as the prototype of this development.⁴⁾

If we look to the Southeast, we can state that the group which Kiselev assigns to Karasuk is very similar to that other group which Loehr⁵⁾ states to be typologically the oldest group in the Ordos region (Pl. VI:1—3). Here no prototypes of them can be found.

Does it mean that this group comes from Minusinsk, as Loehr believes? I do not think so. In the Minusinsk Basin there are finds enough to disprove an »earlier Karasuk».⁶⁾

But there is still a possibility that these daggers could be derived from the western daggers of the more primitive Andronovo type (Pl. VI:4); for Andronovo represents a vast territory. Some time ago Andronovo sites were discovered in the T'ien-shan.⁷⁾ Perhaps we may find the unknown prototypes here. Another indication of a western origin might possibly be the absence of these dagger forms in An-yang.

Hence we may conclude as far as the Minusinsk Basin is concerned that the same strong affinities to the Southeast can be seen in the daggers as in the knives. It is obvious that there can be only one explanation of the two facts.

As for the animal heads, we can show outside Minusinsk that a corresponding group of daggers is known with ram's heads fixed to the hilt forming a slight curve. This resembles some slightly curved hilt-terminals of daggers from the Ordos region.⁸⁾

¹⁾ Tallgren 1927, pl. IV/16.

²⁾ Loehr 1949 b, pp. 60—63.

³⁾ Okladnikov 1938, p. 255.

⁴⁾ Tallgren 1917, p. 42, fig. 34 a, 1937 b, p. 113, fig. 5,5; cf. perforated handles from An-yang.

⁵⁾ Loehr 1949 b, p. 27.

⁶⁾ Loehr 1949 b, p. 61.

⁷⁾ Bernshtam 1949.

⁸⁾ Loehr 1949 b, 4, 5, 7, 8.

This curious detail, the curved handle, seems to have served the purpose of suiting the dagger for horizontal stabbing. The weapon was apparently held like a pistol.¹⁾

The generally known specimens are:

1. Dagger from the Chita museum;
2. Dagger from the Lake Koto Köl (Pl. V:9);
3. Dagger from An-yang;
4. Dagger from An-yang (Pl. V:10);
5. Dagger from Hattim sum, Chahar,
6. Dagger from the Loo Collection, North Chinese borderland; however, it shows a prominent middle rib and a strangely stylized animal head.²⁾

Kiselev³⁾ classifies these weapons (1 and 2) as Karasuk, following earlier Russian scholars. Perhaps it is really impossible to separate them from the animal-head knives. But there is not one specimen known from the Minusinsk Basin which could without doubt be classed here. This form does not seem to belong particularly to the Ordos region either. Possibly the geographical distribution of these daggers may hint at another event, namely at cultural relations existing between Transbaikalia and North China at the same time as those between Ordos and the middle Yenisei, though independent of each other. We shall mention these later on.

Nor, naturally, are burial finds of the next group, the sickles⁴⁾ to be expected. According to method 2, here too a group has been declared as Karasuk. These sickles have a wide perforation for fixing the handle. The point is curved slightly backwards as in the case of the second group of the knives. It seems that they must be regarded as Karasuk. The number of such sickles is small. Moreover, no parallel finds are known from the Southeast. We cannot, therefore, say more about their origin. The only indication is the resemblance to the S-curved knives. This is unfortunate, for afterwards the series in the development goes on without further interruption.

Besides this, there is still a special group of bronze sickles or »sekachi» (Russian scholars do not think them to be sickles but »clearing knives») which belong neither to Old Andronovo nor to Tagar forms. But they show strong analogies to a western group, namely the »sickles» of Sosnovaia Maza, which Tallgren dates at about 900 B. C. It seems obvious that the corresponding specimens from the Minusinsk region must be of approximately the same time, so that they belong at any rate to Karasuk. They seem to be a western admixture in the Karasuk inventory.⁵⁾

Since »Doppelbögen» (Merhart) or »bows shaped ornaments» as

1) Cf. the Scythians on the gold comb from Solocha.

2) 1. = Salmony 1933, XXXVI/1. 2. = Karlgren 1945, Nr. 235. 3. = Karlgren 1945, Nr. 182. 4. = Karlgren 1945, Nr. 183. 5. = Karlgren 1945, Nr. 227. 6. = Salmony 1933, XXXVI/2.

3) Kiselev 1949, p. 102.

4) Kiselev 1949, p. 75.

5) Kiselev 1949, p. 74.

Karlgren calls them¹⁾ appear in the older cemetery of Tomsk as well as in An-yang, the very oldest pieces from the Minusinsk Basin must be supposed to have still belonged to Karasuk. The Karasuk complex in its geographical and perhaps also in its typological and temporal conditions plays an intermediate rôle between these two poles. The fact that bow-shaped ornaments are found in the graves in Tagar time does not contradict this.

Nor does the Russian material explain their purpose. Their relations with the East, as stated by Tallgren, have never been denied since²⁾ Kiselev believes them to be »miniature images of yokes in analogy to the Chous.» But such miniature objects do not normally appear before the Late Tagar period of the Minusinsk region. This form must be much older. The similarity to a yoke, however, is remarkable in the Siberian pieces. This idea was very tempting, the more so as in the Chinese way of harnessing the horse many features are reminiscent of an earlier use of cattle. The carriage was also known to Karasuk as is shown by the stele of the village of Snamenka, where a fourwheeled vehicle is reproduced.³⁾

We know a group of bronze arrowheads which differ from those of Andronovo and which are not represented in the Tagarsk graves either. Of course, this indication (method 2) alone is not enough, but perhaps further arguments will be found later on. This would be of special interest, since the arrowpoints strongly resemble those of An-yang, as Kiselev states.⁴⁾

This part of the inventory may be uncertain in detail, but we can discern several groups:

1. Local or western-related types: the square bronze awls belong to them, but so do also the celts, and one form of the sickles, that is to say objects which are connected with woodwork, perhaps also with agriculture. But even here the distribution is quite different from that of the original Andronovo region, and alterations are to be found.

2. Tools and weapons which cannot be derived from local types.

a. Forms the distribution of which extends from the Altai to Mongolia and the Ordos region as far as An-yang. These are the knives, especially with animal heads, and also the first element to be recognized as reaching so far, the bow-shaped ornament.

b. Besides these, there are elements of similar distribution, but not reaching as far as An-yang. These are daggers⁵⁾, possibly the pick, and the »open» celt. These things, too, have no relationship to the Andronovo of the Minusinsk Basin.

Metals being a highly estimated article of trade, the Karasuk metal types far

¹⁾ Cf. Karlgren 1948, p. 12.

²⁾ Tallgren 1917, p. 52 b.

³⁾ Kiselev 1949, p. 94.

⁴⁾ Kiselev 1949, p. 94. Radloff XXI, 27.

⁵⁾ Loehr 1949 b.

exceed the confines of the Karasuk pottery. Besides the Minusinsk Basin, a large number of finds have been regularly reported from Semipalatinsk and the Altai. Single pieces extend even further, but they are separated by hundreds of kilometers and are very scarce, especially in the steppes. They obviously wandered in a northwesterly direction, into the forest steppes as far as to the Ob and the Tobol. The main direction of the trade was evidently in this region. The older cemetery of Tomsk marks an important commercial centre.

In the Southeast, Tuva is insufficiently explored. Mongolia, however, shows transitional stations to Sui-yüan. But this is a different cultural province; and still more so is that of An-yang. The northern area of Krasnoyarsk and the mountain taiga seem to have been a mere trading-district. The region around Lake Baikal, however, has yielded a much higher number of finds. The types come partly from the Minusinsk region, partly they show closer affinities direct with the South.

It is a common feature of the entire series of metal forms, that far stronger specialization has taken place compared with Andronovo time. Now, instead of one dagger form, three types of knives can be recognized. Besides these, the dagger remains — for special purposes. It marks a great improvement in handicraft skill. It is possible that at that time a change took place in the material used for the moulds.¹⁾ Here stronger differences may be observed than in other regions of civilization. They may have been attributable to a change in the mode of living.

E. Clothing and Food.

A thorough change in the whole mode of living must, of course, show results especially in these domains. But as far as clothing²⁾ is concerned, not enough textiles have remained to give us any material for a comparison with other civilizations. The textiles were only spared where they have been in direct contact with metals, where the copper-pyrites have preserved the threads. Moreover, the flat graves were not at all favourable for the preservation of any organic materials.

But in at least three cases woollen tissue has been found. In two of them the weave was simple, in the third it was a more complicated one, a so-called diagonal weave.

From later times leather was often preserved, especially sheaths for weapons and tools, but it was doubtless already known in Karasuk. Some archaeologists think that the »open» celts were used for working leather. The strange copper-rivets were probably used for attaching a covering for the feet made of the same material.³⁾

The mortuary gifts of food are of greater significance for us.⁴⁾ The incrustation that is sometimes found in the vessels gives us reason to think of liquid or pulpy

¹⁾ Griaznov 1941, p. 254; Tallgren 1917, p. 38.

²⁾ Kiselev 1949, p. 83.

³⁾ Kiselev 1937 a, pp. 147—148.

⁴⁾ Kiselev 1949, pp. 83—84.

food, as mentioned above. But as no chemical examinations have been made, we have no definite results.

Animal bones were never found in vessels, but close beside them. The knives, too, were used as carving-knives, as mentioned before. But animal bones were not by any means found in every grave. Of 290 inventories, only 63 (22 %) contained bones of animals. The distribution of graves with animal bones is a somewhat irregular one:¹⁾

Slite	Sheep	Cow	Calf	Horse	Camel
Mokhov	—	—	—	—	—
Ust-Syda	5	2	—	—	—
Syda	—	—	—	—	—
Krivaia	1	4	1	—	—
Ust Tes	2	5	—	—	—
Georgievskaja gora	1	—	—	1	1?
Bystraia (1930)	3	6	—	—	—
» (1931)	—	—	—	—	—
Podkuninskaia	1	2	—	—	—
IArki	2	—	—	—	—
Ninia 1908	1	1	—	—	—
Tes 1928	3	—	—	—	—
Ilinskaia gora	1	—	—	1	1
Orak 1927	1	—	—	—	—
Bystraia 1929	1	—	—	—	—
Okunev 1926	2	—	—	—	—
Okunev 1927	5	—	—	—	—
Saragash	8	—	—	—	—

I. e. in 37 cases (58.6 %) sheep, in 21 (33.3 %) cattle, in 4 (6.3 %) horse, in 1 (1.8 %) the fore-legs of a camel. Besides these, in grave No. 8 at Okunev Ulus the skeleton of a domestic dog was found.²⁾

The reason for these differences cannot be the wealth or the poverty of the dead. Sometimes a grave with many bones was poor in its metal inventory, and a beautiful knife was found where there were no bones at all. Nor is it very probable that, where bones were absent, there had not existed any cattle-raising at all. Kiselev assumes that they were simply different burial customs.³⁾ We must also remember that not every form of animal food for the dead can be recognized afterwards by a »ham-bone» left behind.

But I do not believe, as Kiselev does, that all these finds of animal bones can be interpreted as mortuary gifts of food, except those in the dog's grave. The

¹⁾ Kiselev 1949 tab.

²⁾ As for the burial site near the town of Abakan, no details are known as yet.

³⁾ Kiselev 1949, p. 84.

»fore-legs of a camel» cannot be considered very tasty food even for a dead person. We might take this as a hint to look for affinities to the still unexplained wood sculptures of the Lop-nor region, which represent animal feet with hoofs.¹⁾ In the Minusinsk Basin, too, hoofs made of bronze are known to have been placed in the graves of the first centuries B. C. Or might this be an affinity to a burial rite similar to that of the »Book of Etiquette and Ceremonial»?²⁾ Kiselev likes to schematise, and I am often obliged to follow him, as only he has the essential material.

The suddenly growing importance of sheep-raising is striking. In former times the various domestic animals were fairly equally distributed. The sheep also became an object of art (as found on knives and steles). Thus we might presume a thorough change in the economic foundations of the people.

F. Dwelling-sites.

Our knowledge of the Karasuk settlements is so limited, especially if we compare it with the richer inventory of the graves and the stray finds, that it may be sufficient to sum up all we know in a short chapter.

Unfortunately, untouched dwelling-sites have been found only at two places so far: near the villages of Anash and of Bateni (the so-called »IArki»³⁾). In both cases the cultural layer is very thin, but it contains a considerable number of sherds. Such rich finds of pottery in contrast to the extraordinarily small extension of the layer made Kiselev believe that the settlement had been very intensive but of brief duration. He gained the same impression from the rather badly preserved sites along the Yenisei. They are lying on the downs, exposed to the wind. Here, besides sherds, stone tools, arrow-heads and scrapers are also sometimes found. All signs indicate that here, too, the cultural layer is very thin. Sometimes calcined stones are found lying in a circle, apparently the remnants of fire-places. There are no further indications of the existence of dwellings.

Does this mean that these sites were only the temporary camps of a nomad people? Kiselev gave up that idea in view of the extraordinary frequency of the pots and the fact of their being sometimes of a good size. The position of the sites is also favourable for agriculture. For this reason the Russian explorer thinks that both agriculture and cattle-raising have existed there. Unfortunately, no remains of hand-mills have been found, as they have a little further west, in the Altai. But we know that certain socketed celts which belong to Karasuk were later on, in Tagar time, changed in such a manner that they cannot any longer have served as tools for woodwork, but had obviously become agricultural tools.⁴⁾ There are numerous further arguments to be quoted against a mere pastoral nomad life.

¹⁾ Bergman 1939, pp. 61—87.

²⁾ Cf. Li Chi 1943, p. 136.

³⁾ Teploukhov 1927, pp. 102—105; Kiselev 1949, pp. 93—94.

⁴⁾ Kiselev 1949, p. 149.

It was during Andronovo that the agricultural development in the steppes reached its climax. Permanent settlements are known in the West. In respect of the Tagar period also there are ample arguments supporting the existence of agriculture. It would be surprising if during the time between these two periods agriculture should have been totally abandoned. Nevertheless, it might have become of less importance. A further argument against a mere nomad life is the finds of sickles belonging to Karasuk.

Moreover, hunting does not seem to have had much significance. Arrow-heads have been found, but their number is not considerable. (Kiselev compares them to arrow-heads of An-yang).¹⁾ If we keep in mind the rite of burial it is obvious why they are not found in the graves.²⁾

But the most important information derived from the dwelling-sites is to be found in another direction. In both the undisturbed sites, a large number of Andronovo sherds were found. It was impossible, however, to separate them stratigraphically. This is why the excavators of these two sites are convinced that they belong to a transitional time, when old and new features were co-existent. This would easily explain why we find Andronovo forms up to the very zenith of Karasuk culture.

On some of the wind-blown sites little drops of bronze were found, as if they had been shed on casting.³⁾ Obviously they used to cast in case of need in every camp. This explains, on the one hand, why there are no large deposits, and, on the other hand, the extraordinary variety of the bronze types. A traditional handicraft did not yet exist, so that no stylization, based on any specific principle, is to be found. Later on, for example in the Tagar culture, we find stylized bronzes evidencing a specialized handicraft. In Karasuk time, highly artistic specimens probably revealed only the special talent of an individual person. We have good reason to regard casting as a »domestic craft» like carpet-weaving or leather-work.

We know the pits where the copper probably came from.⁴⁾ They are situated in the forest zone of the mountains and had already been utilized for some centuries before Karasuk. The kind of sledges found in these pits have also been discovered in Afanasievo and in the »catacombs» of the Pontic steppe. They were still met with in Late Andronovo, as might be concluded from the finds at Grakova. Broad shafts run at a slant down into the earth to a depth of 20 m. They resemble, in general, those of the European Bronze Age. As in Europe, the rock had been loosened by fire-brands, so that work with wedge and sledge could begin. The broken-off ore was brought in baskets to the surface, and was reduced in the immediate vicinity. The dross, containing still a good deal of copper, shows that this was done at open fires. Around these fire-places, halfmoon-shaped heaps of

¹⁾ Kiselev quotes Radloff pl. XXI/27 as an example.

²⁾ As to fishing, we have no evidence.

³⁾ Kiselev 1949, pp. 95—96.

⁴⁾ Besides Kiselev, cf. Levashova 1939.

cross arose, which finally obliged the labourers to change the site. As these copper pits were lying far away from all the ordinary dwelling-sites of the Karasuk people, Kiselev believes that they had belonged to an ancient population, at any rate to another one. But so long as we do not know the artifacts of their dwelling-sites, this is merely hypothetical. Actually we must take into consideration the possibility that the Karasuk people went into the mountains for »seasonal work». In Central Europe, too, the places where iron was found were often located outside the ordinary dwelling-sites. In the immediate vicinity only temporary settlement could be noticed, slightly built huts etc. That does not mean that a nomad people had wandered from one place to another; but the agricultural population went into the mountains for a short time to carry on iron production. We know of similar cases from Central Asia, and we learn from the Mongols that the princes went into the mountains at a certain time in order to forge there to the honour of their ancestors.¹⁾

A very important but, unfortunately, unsolved problem is that of the origin of the tin that was needed for the bronze. Chernikov states²⁾ that in the territory of the Soviet Union only the western Altai has tin. This region does not belong to the Karasuk culture, but to Late Andronovo. That fact does not, of course, exclude an export of tin to the neighbouring country. But a second possibility must be considered regarding the general cultural relations of Karasuk: with Sui-yüan, which, like Chili and Yünnan, belongs to the Chinese provinces where tin pits were known from prehistoric times. Perhaps the chemical analysis will one day provide here an important clue to the orientation of the Karasuk culture.

G. The Karasuk Steles.

Finally, we wish to consider the sculptures (Pl. VII), which differ from the usual Baba figures in their characteristic sabre shape and the peculiar human faces, mostly on the lower half of the narrow side. They are exclusively confined to the Minusinsk Basin. The »Alt-altaïische Kunstdenkmäler» gives an excellent survey of the subject.³⁾

The face is sometimes surprisingly realistic⁴⁾ and, curiously enough, on the head there are often the horns of a bull, or the antlers of a stag, or the ears of an animal. In other cases the faces are extraordinarily stylized. The face is crossed by transversal lines forming an ornament. A third eye appears in the middle of the forehead. Serpentine lines are flaring round the face, reaching sometimes to the very top of the rock. This stylization is completely unknown in other Karasuk objects. Sometimes, however, these monuments are crowned with a ram's head⁵⁾ which reminds

¹⁾ Cf. Alföldi 1932.

²⁾ Chernikov 1948, pp. 97—100.

³⁾ Appelgren-Kivalo, 1931.

⁴⁾ As in the small sculptures of the Andronovo graves.

⁵⁾ Cf. Tallgren 1938, p. 118.

us of some of the animal-head knives. These affinities led Griaznov and Schneider¹⁾ to the conclusion that they belong to Karasuk. In spite of many peculiarities, they are to be classed here rather than anywhere else. Their peculiar features are to be explained by their special function, for both archaeologists believe them to be the images of gods. Kiselev²⁾ speaks of ancestors of a clan or shaman images, but his opinion is based chiefly on theoretical deliberations. In practice, it would not make much difference, for neither the one nor the other theory can be proved.

We have already mentioned that a carriage is to be seen on one of these steles.³⁾

In European literature the style of these steles was for a long time supposed to have affinities to the T'ao-t'ieh masks of China. Hentze⁴⁾ came to this conclusion from the shape of the eye, Salmony⁵⁾ from the cross lines that divide the face. Tallgren⁶⁾ referred in a few words to the same relationship.

Kiselev draws similar comparisons without knowing or citing his predecessors.⁷⁾ His argument is the «third eye» in the middle of the forehead. Knowing much more than the others about the history of the Minusinsk Basin, he is able to show without difficulty that a similar stylization of the human face is to be met with only then, i. e. during the period of the strongest relations with the South-east.

If this comparison can be confirmed, it would be of immense importance. Loehr, for example, makes the objection that no case is known where a specific Shang design is found in the North: this, at least, would be the first typical Chinese design.⁸⁾

On my part, I should like to point out that the rock pictures of Lang-shan (NW. of the Ordos region) show a certain similarity to carvings like those on Tasmin Stone I. Maringer calls them «geometrisch-anthropomorph». Precisely these same features appear on some of the Karasuk steles.⁹⁾

In this survey of the Karasuk culture, I now propose to point out the following facts:

1. The distribution of all these forms is quite different from that of the preceding Andronovo culture (Pls. VIII, IX).

A. The centre is the M i n u s i n s k B a s i n. During this period the population had become very much more numerous. The difference is so strong that Kiselev is unable to explain the increase by the normal growth of the Andronovo people.¹⁰⁾

There are still other regions which depend on Minusinsk for several forms. Some

¹⁾ Griaznov (and Schneider) 1929 a.

²⁾ Kiselev 1933 b.

³⁾ Kiselev 1949, p. 94.

⁴⁾ Cf. e. g. Hentze 1937.

⁵⁾ Salmony 1931, p. 185.

⁶⁾ Tallgren 1937 a, p. 86.

⁷⁾ Kiselev 1949, pp. 98—101.

⁸⁾ E. g. «Head and snake». This subject has a Neolithic prelude in China.

⁹⁾ Observed by F. Bergman and published by J. Maringer 1950, pp. 68—73; M. likewise assumes relations to Minusinsk pictures, but he adduces other figures.

¹⁰⁾ Kiselev 1949, p. 64.

of them are regular colonies, for example the region of T o m s k.¹⁾ The older cemetery of Tomsk belongs to the end of Karasuk, when Tagar forms are already appearing. Here we find typical Karasuk pottery, sharply distinguishable from all pottery in the surroundings. (Besides the late date, this was also one reason for considering Tomsk to be a colony). Besides the bones of domestic animals, grinding stones for corn are found here, so that we may conceive of a pastoral-agrarian economy in spite of the woodlands.

Far in the West, in K a r a g a n d a²⁾, finds have been reported as isolated and as typical Karasuk as those in the region of Tomsk.

B. There is still another group of sites where Karasuk metallurgy predominates, but in pottery and in the rite of interment, i. e. in those features which are strongly connected with the ethnical basis, they show many particular features. These are the steppes in the n o r t h o f t h e A l t a i,³⁾ namely the river-basins of the upper Ob, of the Bia and Katuna. Here we find flat-bottomed vessels. But certain characteristic traits in the ornaments indicate far stronger relations with Scythian forms than with Minusinsk. Does this signify a later date or merely a geographical vicinity for the original home of the Scythians?

The latest of the explored sites is the extraordinarily important one Blizhnie IElbany.⁴⁾

In the s o u t h e r n A l t a i⁵⁾ there have been discovered at least a few Karasuk knives among the small number of stray finds. Certain metal forms of Karasuk type are reflected in finds made in the vicinity of Krasnoyarsk.⁶⁾ Here are, moreover, undoubted ethnical differences. The site of Ust'Sobakinsk shows typical features of Karasuk in metal forms. But besides this, the pottery is archaic; stone tools are predominant, and no evidence of cattle-raising can be found.

But in the n o r t h w e s t e r n direction the influence of some forms reaches as far as to the Ob and the Tobol, perhaps even beyond the Urals.⁷⁾

The w e s t e r n A l t a i (Semipalatinsk and the upper Irtysh), however, seems never to have been dependent on Karasuk. This region may rather have received some suggestions from Karasuk, and have begun competing with Minusinsk.⁸⁾

Even the Lake B a i k a l region was strongly influenced by Karasuk. But here we find quite another cultural complex. In the so-called »coffin-graves» and »stone-tombs», these influences have lived on for a long time.⁹⁾

1) Kiselev 1949, p. 88. Bibliography.

2) Rykov 1935.

3) Kiselev 1949, p.89. Besides, cf. Griaznov 1927, 1930 a.

4) Griaznov 1949.

5) Debets 1948, p. 82.

6) Kiselev 1949, p. 87.

7) The settlement to which the older cemetery of Tomsk belonged was apparently a commercial centre.

8) Griaznov 1930 b. Here is a particular cultural centre.

9) Okladnikov 1938; Sosnovskii 1940 and 1941.

C. Besides these, there are regions which show many affinities without belonging to the same complex. These are, chiefly, Suei-yüan and, finally, An-yang.

2. The Karasuk culture, therefore, shows a completely different distribution compared with Andronovo. The inventory has, in some respects, still retained features of Andronovo and even of Afanasievo.

Such continuity is to be found in:

- a) burial customs;
 - b) ornamentation and certain formal elements of the pottery;
 - c) dwelling-sites (transitional forms);
 - d) ornaments (beads etc.);
- and perhaps also in:
- e) socketed celts;
 - f) agricultural implements (sickles).

A series of types is peculiar to Karasuk:

- a) pottery (round bottom);
- b) ornaments (finger rings etc.).

There are, however, numerous forms which cannot be derived from the local development, but they show strong affinities to the North Chinese borderland, partially even to An-yang. These are:

- a) technique of the pottery;
- b) a special form of pottery;
- c) certain forms of ornaments;
- d) celts with an orifice;
- e) knives (also with animal heads);
- f) daggers;
- g) bow-shaped ornaments, possibly together with the corresponding form of the carriage;
- h) predominance of sheep-raising;
- i) arrow-heads (?).

This survey clearly shows that the Andronovo inheritance is but one element in the Karasuk culture. With this small inheritance, the Minusinsk region abandons the western cultural complex, so to speak, and enters an eastern one.

There remains but one question: did this happen through cultural diffusion only or was it caused by the foundation of an empire, or by an actual migration?

Whether we have here an occurrence of only a cultural or also of an ethnical order cannot be decided by the material presented so far. We shall, therefore, now consider the results of the palaeo-anthropological examination of skulls and skeletons of the Karasuk graves.

II. ANTHROPOLOGICAL MATERIAL.

The history of research in this field is very simple. The initial slight efforts showed a brachycephalic element among the cranial material from the Karasuk time with certain Mongoloid features. Hence we have a superficial similarity to that mixed Turkish type which connects the characteristics of the so-called Pamiro-Ferghan race with eastern features. It is often found in the Mediaeval nomad graves of Turkistan. No systematic research was, however, possible before Teploukhov had given his clear definition of the Karasuk graves.¹⁾

It was Debets, then, who, relying partly on his own excavations, examined and discussed the steadily increasing material in the following decades. Landmarks in his work were a treatise on 37 skulls and skeletons from the Karasuk graves in the »Anthropological Journal» 1932,²⁾ and a summary of all available material, including especially that of Kiselev's excavations in South Siberia, in his »Palaeoanthropology of the Soviet Union» in 1948.³⁾ Debets very soon saw that the Karasuk people could not belong to the Pamiro-Ferghan race, since that type is a late one which has its origin in quite another region. In order to form a judgment on that mixed type which belongs to the Karasuk culture we must first consider the people of the Afanasievo and of the Andronovo cultures.

Debets describes the people of Afanasievo⁴⁾ as being very tall and strong. The skull shows a pronounced dolichocephaly, very prominent nasal bones, a rather low face, low orbits, and a very broad forehead. All these characteristics make the Afanasievo people very different from the former inhabitants of Cisbaikalia and probably of all people of the Siberian taiga. They show that we find here Europeide types which are somewhat different from the modern representatives of that race. Many features, especially the broad face, remind us of the Cromagnon type. It is doubtless an old form. The people are rather similar to those of the western »pit graves».

The skeletal material of the Andronovo culture⁵⁾ (Pls. XI, XIV) is a variety of the Afanasievo type. There is, however, a series of characteristic differences:

1. The face is still lower, which implies an increase in the nasal index and a decrease in the orbital index.

2. The skull is somewhat shorter and broader, so that the cranial index increases. (The Andronovo people are mesocephalic).

3. The forehead is straight, possibly in connection with the general change in the cranial structure.

This type has probably immigrated into the Minusinsk region and gave agriculture

1) Kiselev 1949, p. 67.

2) Debets 1932, pp. 26—48.

3) Debets 1948, pp. 77—83, pl. 12.

4) Debets 1948, pp. 64—69.

5) Debets 1948, pp. 70—76.

a more important position. On the other hand, this type is spread as far as the Pontic steppes.

The cranial material of Karasuk¹⁾ (Pls. XII, XIV), however, shows fundamental differences from these two types:

1. The face is narrow and high (the difference is as great as is at all possible within the range of the normal variability of these characteristics among men). The differences in nose and orbits are accordingly considerable.

2. The nose is flat — like, for example, that of the Turkish Nomads of the Middle Ages. (Hence they were at first compared to them).

3. The brachycephaly has become a good deal stronger. This is to be explained by a diminished head length.

4. The forehead is narrow and inclined. The skull has lost in height. The brow ridges are not much developed.

If one cranial form is developed from another (for example, in brachycephalization), a certain functional connection is to be found between the modifications, as Debets believes.²⁾ In this case, however, the differences are just the opposite of the usual functional relations.

Cranial and facial index, for example, are in a negative correlation. Between the Andronovo and the Karasuk types this correlation becomes positive.

If the skull becomes shorter, the forehead usually becomes straighter. But here the contrary is noticeable.

A more inclined forehead is normally connected with strongly expressed brow ridges, but the Karasuk skull shows a more inclined forehead, together with not very highly developed brow ridges.

Thus the Karasuk skull differs from the Andronovo skull not only formally but also in the direction of its development. It is obvious, then, that the Karasuk people cannot be the direct descendants of the Andronovo people. Only to a limited extent could the ancestors of this people be of Andronovo type.

Strong differences in the skeletons are pointed out by Debets. The Karasuk skeletons are small and slender.

Even the Afanasievo series has not very definite relations with this material. The following combination of characters: flat nose, high face, inclined forehead, and weakly expressed brow-ridges belong apparently to the Asiatic racial group, that is to say, to the Mongoloids in the widest sense.³⁾ But the Mongoloids who are the eastern and northern neighbours of Minusinsk have a broader face,⁴⁾ so that there is no solution of the problem here. The next types akin to these are

¹⁾ Debets 1948, p. 77.

²⁾ Debets 1948, p. 79.

³⁾ Cf. Roginskii 1937; Cheboksarov 1947.

⁴⁾ Survey in Debets 1948, pp. 53—63. The west is Europoid and remains Europoid. Nor can any Mongoloids of this kind be found in the period in question in the near south and southeast e. g. in Tuva.

found further southeast in the territory of modern China. Even the Chinese of to-day show this combination of characteristics, but it is more strongly expressed in the cranial material from the excavations of Neolithic sites in the region of the Yang Shao culture.¹⁾

The result, at any rate, looks precisely as if »Sinides»²⁾ had taken part in the formation of the Karasuk population. No skull, however, bears these south-eastern racial characters unmixed. We repeatedly find details resembling peculiarities of Andronovo, but mostly Afanasievo types.

Debets, therefore, regards the Karasuk people as a mixed population.³⁾ Local types with remarkably predominant Afanasievo features mixed with a new element, the origin of which must have been the »North-Chinese-Manchurian-Korean» territory. Besides this, a brachycephalic Europoid element is assumed by Debets. He believes that this element had already been mixed with the Sinides outside of Minusinsk. This would explain the absence of unmixed types.

These south-eastern admixtures are not found anywhere in the Altai and in the western territory. Here the population is still of the original Andronovo type.⁴⁾

The skeletal material of the following Tagar time (Pls. XIII, XIV) likewise indicates that in the Minusinsk region an invasion had taken place which was limited in time and place. Once more the development takes a new course. The Europoid element predominates again. Only in some characters does inheritance of Karasuk remain alive.⁵⁾

As far as our knowledge of the western sites goes, the situation of Minusinsk appears absolutely unique.

III. SUMMARY.

If we compare the results of anthropology with those of the archaeological research, the following becomes evident:

1. The inheritance of Andronovo features and the revival of Afanasievo features, especially in pottery and in burial customs, correspond to Afanasievo and Andronovo elements in the cranial material.

2. The southeastern relations in respect of metallurgy show a parallelism in the »Sinide» kinship of the skulls.

¹⁾ Debets 1948, p. 81; Black, 1928. This latter treatise explains why the cranial material was at first compared to the Tibetic one (cf. Cheboksarov 1948).

²⁾ Gaul (1943, p. 164) cites this statement from Debets 1932, but he does not realize its importance. »Sinides» means only racial relationship to the proto-Chinese type (according to Black), and is not equivalent to v. Eickstedt's term.

³⁾ Debets 1948, p. 82.

⁴⁾ Cf. Debets 1948 tabs. 15—17.

⁵⁾ Debets 1948 pp. 124—129. Precisely in regard to the strong cultural continuity from Karasuk to Tagar this involves a special problem.

3. Karasuk must be looked upon as a mixed culture practised by a population which is likewise mixed.

4. Immediate predecessors who might have possessed these »Sinide« elements in race and culture in the Minusinsk Basin or in its immediate vicinity are not known to us.

5. Therefore a migration over far distances must have taken place.

6. The concentration of similar forms in Suei-yüan and Chahar indicates from which part of the vast region of the »Sinides« this migration must have started.

7. West of Minusinsk, especially in the Altai, this combination of anthropological type and Karasuk inventory does not exist. Here we can therefore only reckon with cultural diffusion. Immigration has been confined to the Minusinsk region.

8. Karlgren deals mainly with weapons and tools belonging to the inventory of that immigrating group. No doubt, therefore, his conception of this part of the problem is correct.¹⁾

IV. CONJECTURAL CONSIDERATIONS.

A migration from the Chinese borderland to the Minusinsk Basin at the beginning of the first millennium B. C. must lead, of course, to a thorough revision of our conception of the cultural structure of Siberia. This means that at that time the irradiations of two high-cultures crossed there. In the Bronze Age of the western steppes we have to take into consideration quite similar ethnical movements. Immigrants (coming perhaps from the South)²⁾ were the builders of the »catacombs«. The distribution of power and the direction of migrations differ much from what we have believed up till now, basing our conclusions on an analogy with later times. These invaders must have played a rôle somewhat like that of the Etrurians in Italy.

This migration, moreover, has essential consequences for our knowledge of the Chinese borderland. It was here that the movement started. The emigrants were relatives of the people who produced the Karasuk-like Ordos bronzes, or they were even identical with them. Since, at Minusinsk, they resemble the stock of the North Chinese population, they must have had the same characteristics in their own country. Therefore we may suppose that the Shang-time Ordos bronzes were produced by the »Sinides« of the Chinese borderland.³⁾

This is a starting-point. But are we not able to state anything more definite? The Russian scholars try, with varying degrees of success, to reach further conclusions, for western treatises are inaccessible to them as theirs are to us. Following

¹⁾ Contra Loehr 1949 a, p. 133.

²⁾ Cf. Debets 1948, pp. 103—104. A similar immigration in the region of the Fatianovo culture is discussed by Trofimova 1949.

³⁾ We know almost nothing about the prior population of the Gobi, and we cannot therefore say anything about the confines of their distribution. The »Great Wall« is at least a later frontier.

the theories which are summed up by Kiselev¹⁾ I now propose to give a short survey of the new situation.

In the first place, it is striking that the »increasing importance of sheep-raising through a south-eastern immigration» conforms to the idea which the Shang people had of their northwestern neighbours. Their human sacrifices are known to have been chosen from the prisoners of war and were designed by the character 𠄎 which has subsequently been interpreted as »Barbarians who raise sheep».²⁾ Because the Tibetic Nomads have continued to raise sheep in a very archaic form even to-day³⁾, and the character »Ch'iang» being to-day used for such groups, many efforts have been made to identify these »Ch'iang» of the oracle bones with the Tibetans.⁴⁾ Cheboksarov, therefore, speaks of the Karasuk culture as a »Tibetan invasion» in the Minusinsk Basin.⁵⁾ Such attempts, naturally, go far beyond anything we know for certain, and what we shall ever be able to prove. But there may in fact have been tribes, even far out in the Gobi, who were akin to the Chinese, the northern wing, so to speak, of the »Sinides». Later on, in the same place we find Turco-Mongols. Therefore we may reasonably suggest that the Tibetans are partly composed of the descendants of those who were displaced when the »Northern Sinides» were defeated.

But the Russian scholars follow up another clue. They try to show that the ethnonym »Din-lin» (= Ting-ling) was spread wherever Karasuk culture was found.⁶⁾ It does not matter, they say, if according to their description the Ting-ling have Europoid features, for we know that the Minusinsk region became Europoid again in spite of the continuation of the cultural development — maybe by sub-diffusion. The very ethnonym appears in the Chinese borderland. Maenchen-Helfen⁷⁾ alludes to the possibility that we may find here fragments of the Yeniseian Ting-ling, which were displaced perhaps by the Huns. The Russians, on the contrary, believe them to be the very survivals of the Ting-ling who remained in their original country. Accordingly, the remark of the T'ang shu 217 B »The Chien-k'un intermarried with the Ting-ling»⁸⁾ is interpreted as an indication of the origin of the Hakas. As we are well aware, this people was formed by a fusion of Mongoloid elements from the Altai with the old Europoid inhabitants of the Minusinsk Basin. This process can be pursued fairly exactly in the »Tashtyk graves».⁹⁾

If we compare the view of Kiselev with that of Maenchen-Helfen we find essential differences. Without a thorough reexamination of the Chinese sources it is

1) Kiselev 1949, pp. 101—108.

2) Creel 1936, pp. 213—216.

3) Hermanns 1949.

4) E. g. Eberhard 1942, p. 416.

5) Cheboksarov 1948.

6) Kiselev 1949, p. 106 Bibliography.

7) Maenchen-Helfen 1939, p. 84.

8) Maenchen-Helfen 1939, p. 82.

9) Kiselev 1949, pp. 216—268; cf. Tallgren 1937 a.

impossible to come to a decision. Otherwise constructions erected on that basis seem rather fantastic.¹⁾ I do not therefore intend to go into further details here.

Of far more importance than such a premature identification would be some indication as to why the settlement of a far-off region like Minusinsk took place. No final answer can be expected, since we do not know what the pertinent finds in Northern Mongolia which were observed by Kiselev really mean.²⁾ We do not know who were the earlier inhabitants of this region. The narrow-faced Mongoloid element of the Northern Chinese never appears unmixed in Minusinsk. So we may assume that already here a mixture with Europoids took place. Perhaps these may have been brachycephalic Europoid types, perhaps even groups that approach the Afanasievo type. This could explain the surprising Afanasievo-renaissance of the Minusinsk region. (Kiselev states at any rate that he has found fragments of pottery in Northern Mongolia which are akin to the Afanasievo forms.) But this is mere speculation.

I shall confine myself, therefore, to presenting the various reasons which *a priori* might cause such a migration:

1. The nomads need agrarian products and are, therefore, attracted by an agricultural population, such as the Andronovo people of the Minusinsk region. This leads to a sort of symbiosis such as we know existed between Turks and Iranians in the Middle Ages.³⁾

2. Just as in Afanasievo time, it may have been again the need for raw materials, namely, copper.

3. Besides these reasons, the existence of a very powerful culture in the North Chinese borderland⁴⁾ may have supplied the basis for such a distribution.

4. Vice versa, the military pressure of the Shang state may have forced its neighbours to emigrate.

Kiselev favours this last, doubtless quite tenable, thesis. If we consider how the Chinese treated their prisoners of war, its probability increases. In any case, the Ordos people were not equestrian warriors, otherwise they would have captured the Chinese for the purpose of sacrifice, and not vice versa, as was actually the case. This fact is confirmed by the absence of horse harness in the Karasuk complex.

The choice between points 3 and 4 touches the question discussed between Karlgren and Loehr, whether Animal Style elements have migrated from An-yang into the nomad culture, or, on the contrary, whether they appear as a nomad interpolation at An-yang.

We now arrive at the first partial problem which we excluded from consideration at the very beginning, not wishing, nor being prepared, to jump into the claws of the Sinologists. We would only make the remark that even in the »nomad region»,

¹⁾ Cf. lectures published in SE VI/VII, 1947.

²⁾ Kiselev 1947, p. 359.

³⁾ Kiselev 1949, p. 87 and treatises by Tolstov and Bernshtam.

⁴⁾ Loehr 1949, p. 23.

that is to say in the Pazyryk Kurgan II, besides the Animal Style of the «knightly» equipment there is to be found an ornamental style in textile goods and pottery. Both of these styles must have co-existed for several hundred years.¹⁾

Moreover, it is very characteristic of an early high culture that quite different elements are contemporaneously alive in a hierarchical order. Thus, the realistic Animal Style may belong to a group akin to the Ordos people, but it need not necessarily have been a recent mode — an «episode» so to speak. Besides, Shang ornamentation does not cover all objects; for example, rings of nephrite are often without décor. Perhaps it is possible here too to distinguish several layers of tradition.

But how does the knowledge of the Karasuk migration affect our problem?

It does not mean a settlement of the question as to whether the Animal Style originated in Ordos or in An-yang or elsewhere. Only the usual way of deriving these Animal Style elements from the northern forests over the Minusinsk Basin is barred. Firstly, they are completely absent in Minusinsk during Andronovo time, and secondly, the general «current of culture» moves in the opposite direction. It is incomprehensible that a single element should have floated upstream.

Consequently, the Animal Style of the south is to be treated as independent so long as no derivation can be affirmed.

But can, vice versa, the Animal Style of the north be totally derived from the south — for example, all the knives with animal terminals?

I do not believe that to be possible, but I should like to demonstrate the interweaving of themes from the south with the inheritance of the forests in some famous objects: the bronze knives of Seima and Turbino.²⁾ (Pl.XV:2, 3). These knives have already been published in the West in complete detail by Tallgren. They are quite isolated in their cultural surroundings, not in their figural ornamentation but in their structure. Typologically they belong to the group of heavy curved knives with the points slightly curved back. Kiselev, however, sees a special similarity between these knives and those of An-yang which he studied in Moscow in 1940. It is certain that the relations with the Far East are more convincing than those with the usual types from the Minusinsk region. Naturally, such a parallel over 4000 km. as the crow flies is somewhat suspect. But we know related specimens, bridging the gap between the An-yang and Seima cultures, such as the knife in the museum of Irkutsk (Pl. XV:4). It is a surprising fact, moreover, that the Seima inventory contains a series of objects which indicate a connection with the material especially from An-yang published by Karlgren, in 1945, for example, socketed celts without lugs and the very typical spears-heads.³⁾ Many years ago Gorodtsov had already considered the possibility of an eastern derivation

¹⁾ Rudenko 1948, p. 59.

²⁾ Tallgren 1938, p. 117 and p. 121. But he believed them to be nearer to Andronovo.

³⁾ Kiselev 1949, p. 86: «The celts found at An-yang resemble the Seima types, especially their Transuralic variant . . . The same I can state of the spear-heads.»

of these forms. What this means more precisely must be shown by further investigation. His standpoint, however, has not yet completely lost its importance.¹⁾ We have another indication that far-reaching commercial relations existed, namely, the rings of »white nephrite». They are met with in Seima. We know them from the forest steppes of Western Siberia. They belong to the ornaments of the dead in the Glazkovo graves of Cisbaikalia. Kiselev declares that he has seen similar specimens from An-yang in the Chinese Exhibition. The occurrence of this sort of nephrite is extraordinarily rare. The Russian scholars are aware of only three places within their own territory. Of these, the Carpathians and Tadzhikistan may be left out of consideration here, so that only one site is left. This is situated on the Irkut river. Here this stone ware was sought for and dug up already in prehistoric times. The occurrence of this special material seems to be of about the same period in China as that of Seima and Glazkovo. Hence it is quite possible that there existed a far-reaching trade.²⁾ In this connection it is of importance that no similar finds were made in the western steppes. The trade-route goes apparently from China to Baikalia, and farther west along the forest steppe, which must have seemed safer, in the mixed zone of Mongoloids and Europoids, avoiding the regions where the Scytho-Sarmatic world was just arising at that time. The community of the northern forest steppes is probably reflected in the many connections in the way of languages and objects which we call Ural-Altaiic.

In spite of this, the animal figures on the knives cannot be explained as being of Chinese origin. We also know them on daggers of a completely western type,³⁾ and, finally, among the finds on the Uralic moors.⁴⁾ We possess numerous realistic animal carvings; such works of art are to be found across the whole Taiga of Siberia, not in wood, of course, which has decayed, but in bone-carvings. They are of an almost immeasurable age, reaching, possibly, even as far as the Palaeolithic. Okladnikov publishes, for example, a beautiful piece from the Kitoi stage of Cisbaikalia which is considerably older than all these cultural relations.⁵⁾

We are now in the surprising situation of having found not one root only of the Animal Style, but two at the same time. The southern influence enters well-prepared ground here.

We could find some assistance in this difficult position by supposing an earlier »migration» or diffusion from the Baikal region, which could have brought these Animal Style elements to China. From there they would have been returned with a superior metallurgy. But this is mere guesswork.

It is almost a consoling thought that the situation in the Far West is also intricate.

1) Chernetsov 1947, p. 65—66.

2) Kiselev 1949, p. 86. I am merely giving Kiselev's explanations; it need only be observed that, for example, Andersson 1943, p. 263, is unknown to him.

3) Cf. Tallgren 1916, p. 11 fig. 5 c.

4) Cf. Eding 1940.

5) Kiselev 1949, p. 103.

Here, too, we know of a southern Scythic Animal Style besides the northern art of carving in the forests, without being able to derive the one from the other. But in Ananino, for example, we have an unmistakable combination of both tendencies.¹⁾

If we now consider that it is also impossible to derive the Tagar style from the Scythian, or vice versa, then we must be prepared to accept the fact that Animal Styles cannot be beaded like the pearls of a necklace. At any rate, there exists a southern world of Animal Style and a northern one, and it makes little difference whether the southern has been developed in the region of Ordos or of An-yang.

So far I have intentionally abstained from any attempt at absolute dating. The argumental force of the Karasuk Migration is even stronger when we consider that it is not based thereon. But the general chronological structure is fairly evident.²⁾ It is supported, firstly, by the relations with the Late Andronovo of the West, which is parallel to the Khvalinsk culture as well as to the «Cimmeric» culture of the west, and, besides these, by the older cemetery of Tomsk. The latter shows in a convincing way that late Karasuk types together with late Seima forms and early Tagar forms belong to the same period.³⁾ We know, moreover, that the Karasuk culture must have been earlier and even have already ended when the Maiemirsk finds of the Altai begin which give evidence of relations with the Scythians. The presence of beads made of white paste, such as are known from the latest Glazkovo graves, fits well into this scheme. These Glazkovo beads have chronological relations with Seima (on account of the nephrite rings).

The Karasuk complex must have passed through a long period of development before the forms of the older cemetery of Tomsk could come into existence (about 1000 B. C.). Kiselev therefore feels justified in assuming a considerably earlier date for the beginning of the Karasuk culture.

However, as he also bases his chronology on a wrong dating of An-yang (he is acquainted neither with Karlgren nor Ch'en Meng-chia),⁴⁾ the beginning would be about 100 years later, i. e. about 1100 B. C. It would, however, be better to admit that the beginning of Karasuk time cannot yet be fixed precisely to a century. We must be content with the indication that in the dating of 1000—700 B. C., as proposed in older Russian treatises, the beginning is put rather too low.

There is still one interesting question to be considered: what became of the relations between North China and Minusinsk afterwards?

As we have already mentioned above, the relations of China with the North were not confined to this migration, which only followed a previously existing

1) Notice on Eding's treatise in KS XII pp. 168—178, especially pp. 177—178.

2) Cf. Kiselev 1949, pp. 104—108 for a detailed discussion.

3) For the dating of Seima cf. Tallgren 1937 c, pp. 42—45. This article would have been very useful to Loehr. 1949 a, p. 131: «They belong to the first half of the second millennium.» Cf. also Tallgren 1915 a.

4) Cit. by Loehr 1949 a.

»cultural current». Nor did this cease in later time, but another fundamental change took place.

Between the Karasuk culture and its western neighbours there was a racial frontier, which probably also corresponded to a linguistic one. Therefore the invasion of the far more specialized Karasuk forms met with remarkable resistance. In Tagar time these racial boundaries no longer existed. The Minusinsk Basin again became part of the vast region of Europoid races, though the cultural structure was not subjected to any repeated change (Pl. XVI).

This unity with the West becomes manifest, especially, in strong relations with the Pontic Scythians. But it would be impossible to speak of an absolute dependence of the one region upon the other. Besides the many Scythian arrow-heads, in Minusinsk the quite peculiar pick, which has no Scythian counterpart, belongs to the equipment of the warrior. Even in the Animal Style strong differences can be found. The archaic Scythians prefer certain animals of the South, for example, lions, which are, naturally, not to be found in Minusinsk. Social forms may have been common to both, when the warrior class became consolidated. A real caste of warriors arises competing even with far-distant groups, ready to enter service also under foreign command. The Animal Style becomes the special style of this caste.¹⁾ The Ordos province, too, belongs to its territory. But the relations between Ordos and the Far West are often stronger than those between Ordos and Minusinsk in particular.

In spite of this apparent uniformity of the Scythian world, immense changes are effected. Naturally, these cannot be recognised in the metal inventory, but only in burial-sites and in anthropological material. By this time the zones between Transbaikalia, Northern Mongolia and Tuva have become united to form a cultural province which is characterised by the »stone tombs».²⁾ In this cultural province are found broad-faced Siberian Mongoloids. The Mongoloid elements which probably belong to the Turks and Mongols, as we now know, go well together with the idea of »knight-hood». (Cf. for example in the Altai, where in the II. Pazyryk Kurgan, according to the customary rite of interment, a »Tungide» prince is buried beside a »Europoid» queen).³⁾ These invaders become more and more powerful in the Altai, occupying the whole region between Minusinsk and Ordos. We may very well suppose that they have sealed the fate of the »Sinides» in Mongolia and in the North Chinese borderland.⁴⁾ The Huns coming from still further North put the finishing touches to this process of »Turkization».⁵⁾

¹⁾ There already exist craftsmen (with trade-marks and a technique, for example, in the reproduction of the ears etc.).

²⁾ Kiselev 1947, p. 362—364, Sosnovskii 1940 and 1941.

³⁾ Rudenko 1948; pl. XXIX.

⁴⁾ This explains why in Han time almost identical forms exist in the Ordos region and in Transbaikalia, i. e. the old home of the »Tungides»; cf. Werner 1934.

⁵⁾ Debets 1948, p. 123 points out that the skulls in the tombs of the Huns belong to a type which is only known from the upper Lena, where similar forms of pottery have also been found.

At any rate, we are justified to-day in accepting the idea that the Ordos bronzes do not belong to a homogeneous people. They represent, moreover, a continued metallurgical tradition, during the epoch of which an immense revolution took place, namely, the displacement of the earlier sheep-raising nomads by equestrian warriors of a character much more dangerous to the Chinese.

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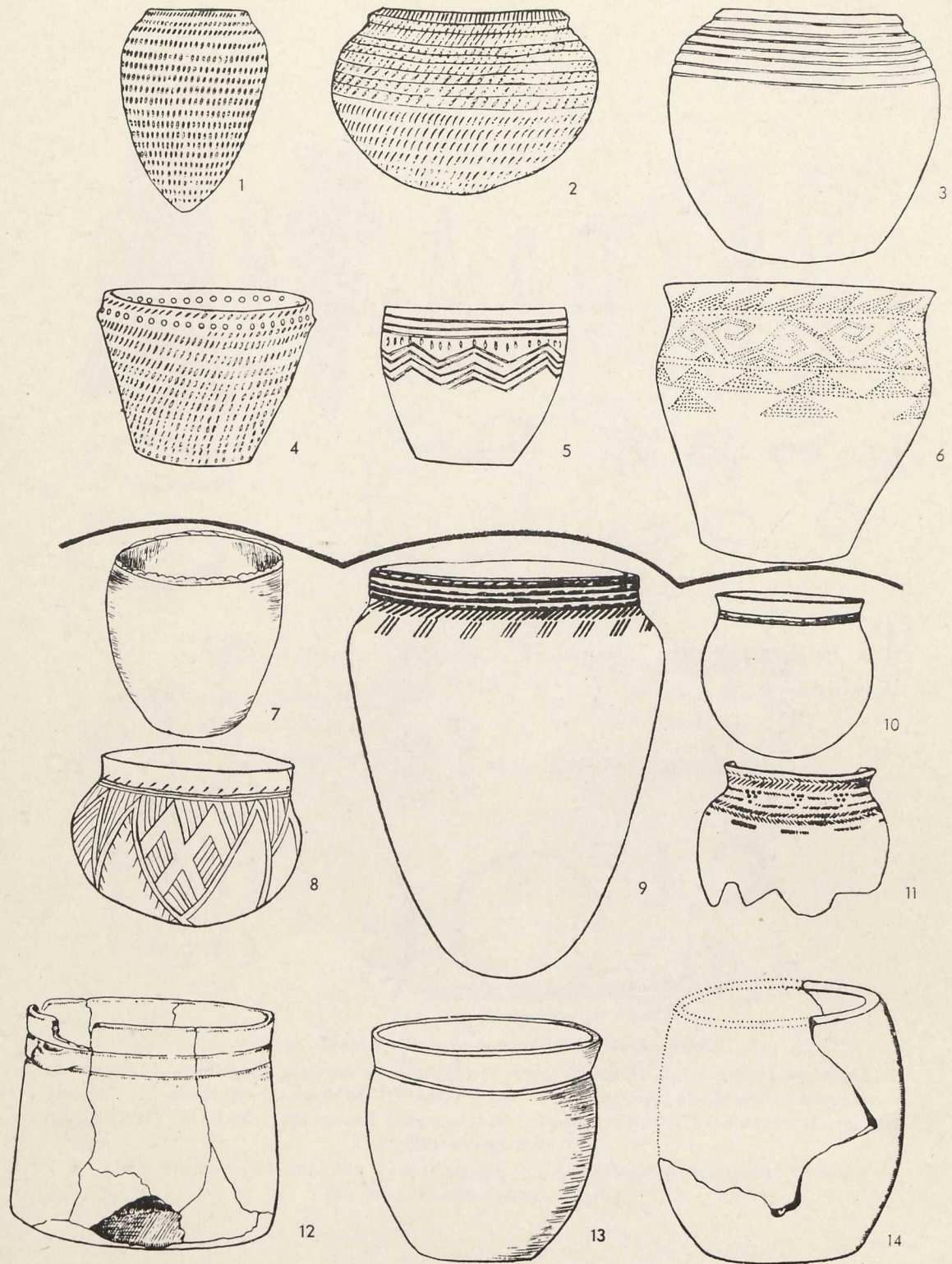
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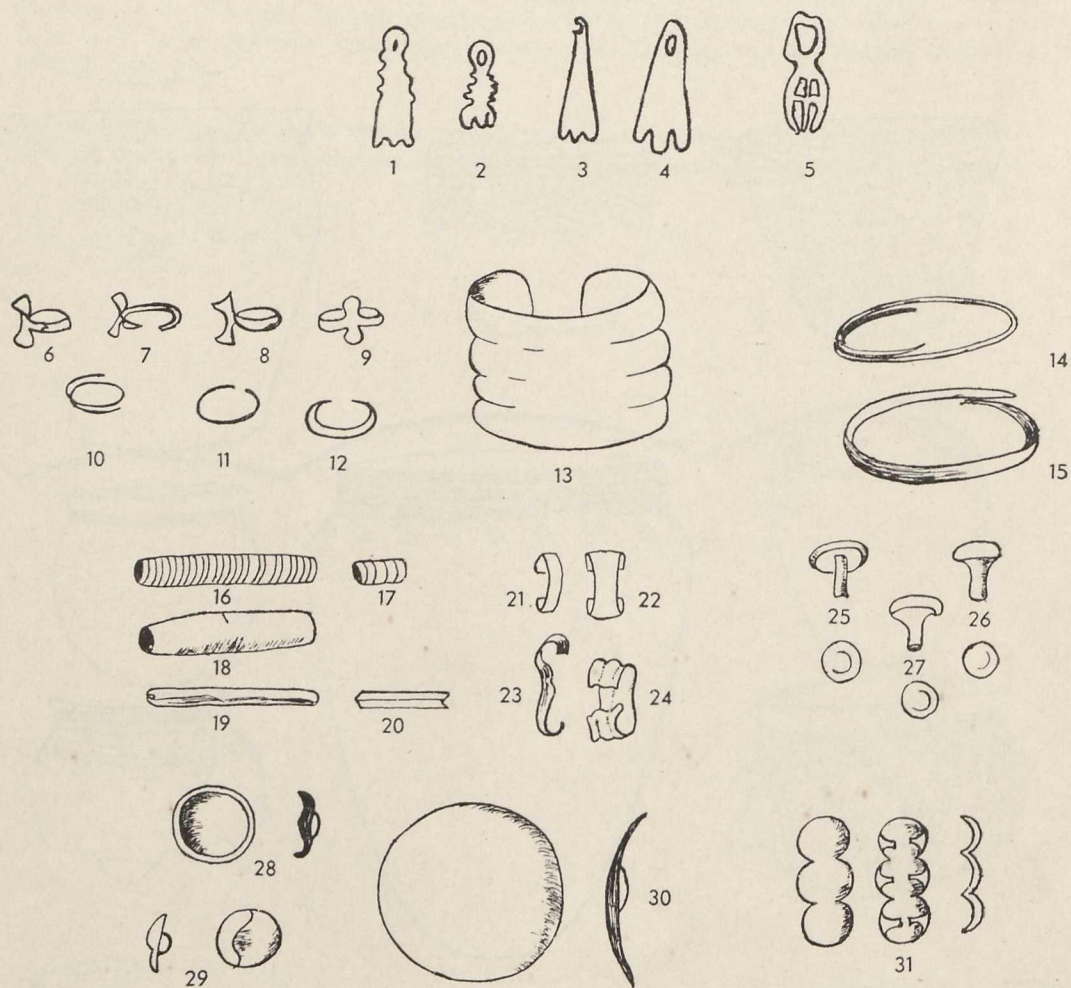
Abbreviations according to *Sovietskaia Arkheologiia* and *Sovietskaia Etnografiia*.

Some of the treatises cited were not accessible in Vienna. I could only study them during a short journey abroad.



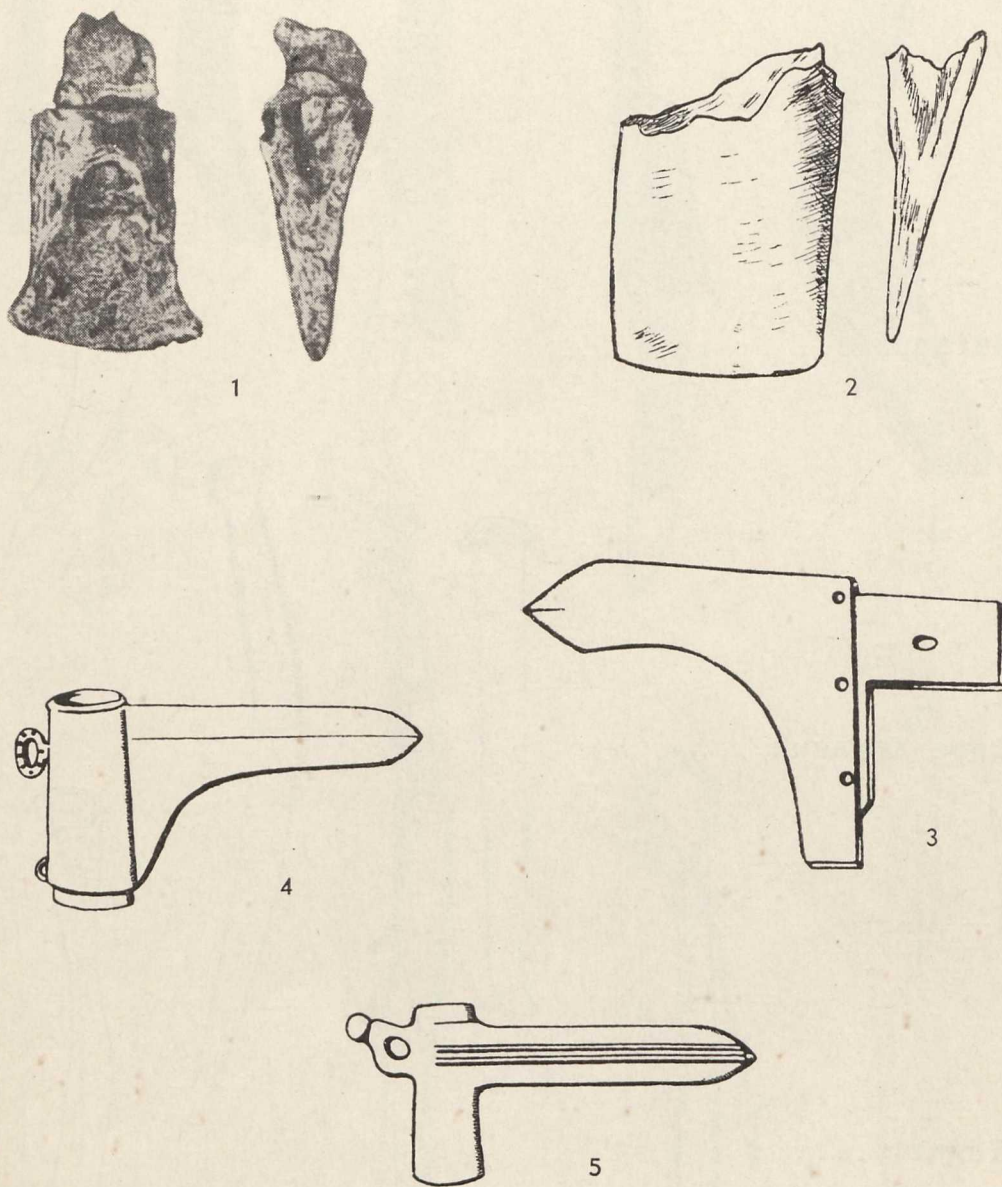
Evolutionary scheme of Minusinsk pottery from Afanasievo to Late Karasuk/Tagar:

1—3 basic forms of Afanasievo; 4—6 basic forms of Andronovo; 7—11 basic forms of Karasuk (7 with Andronovo features, 11 with Afanasievo features); 12 Karasuk vessel with southeastern features (isolated); 13—14 late Karasuk/Tagar forms. Drawings after Komarova, Kiselev and Lipskii.



Characteristic metal ornaments of the Karasuk complex.

1—5 pediform pendants: 1—4 Minusinsk types, 5 related type of Northern Mongolia; 6—12 fingerings and «curved wires»; 13—15 bracelets; 16—20 hollow tubes; 21—24 clasps; 25—27 rivets; 28—30 round buttons; 31 ornament of spheroid segments. Drawings after Kiselev 1949, Gaul 1943 (Teploukhov), and Lipskii 1949.



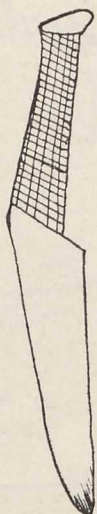
Karasuk weapons and tools.

1 celt of the Beia river (Kiselev 1949); 2 celt of Abakan (Lipskii 1949); 3—5 evolutionary scheme of the pick after Kiselev (rather dubious).

Andronovo



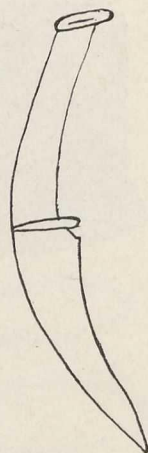
Karasuk ...



1



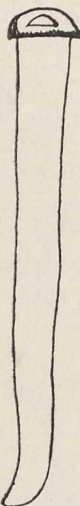
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3



Late Karasuk



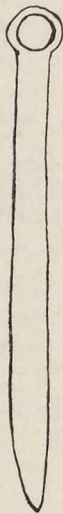
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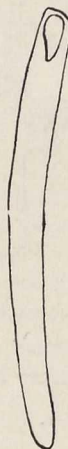
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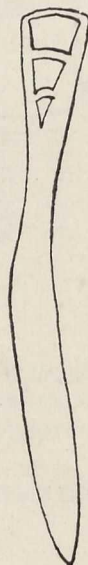
Tagar



6

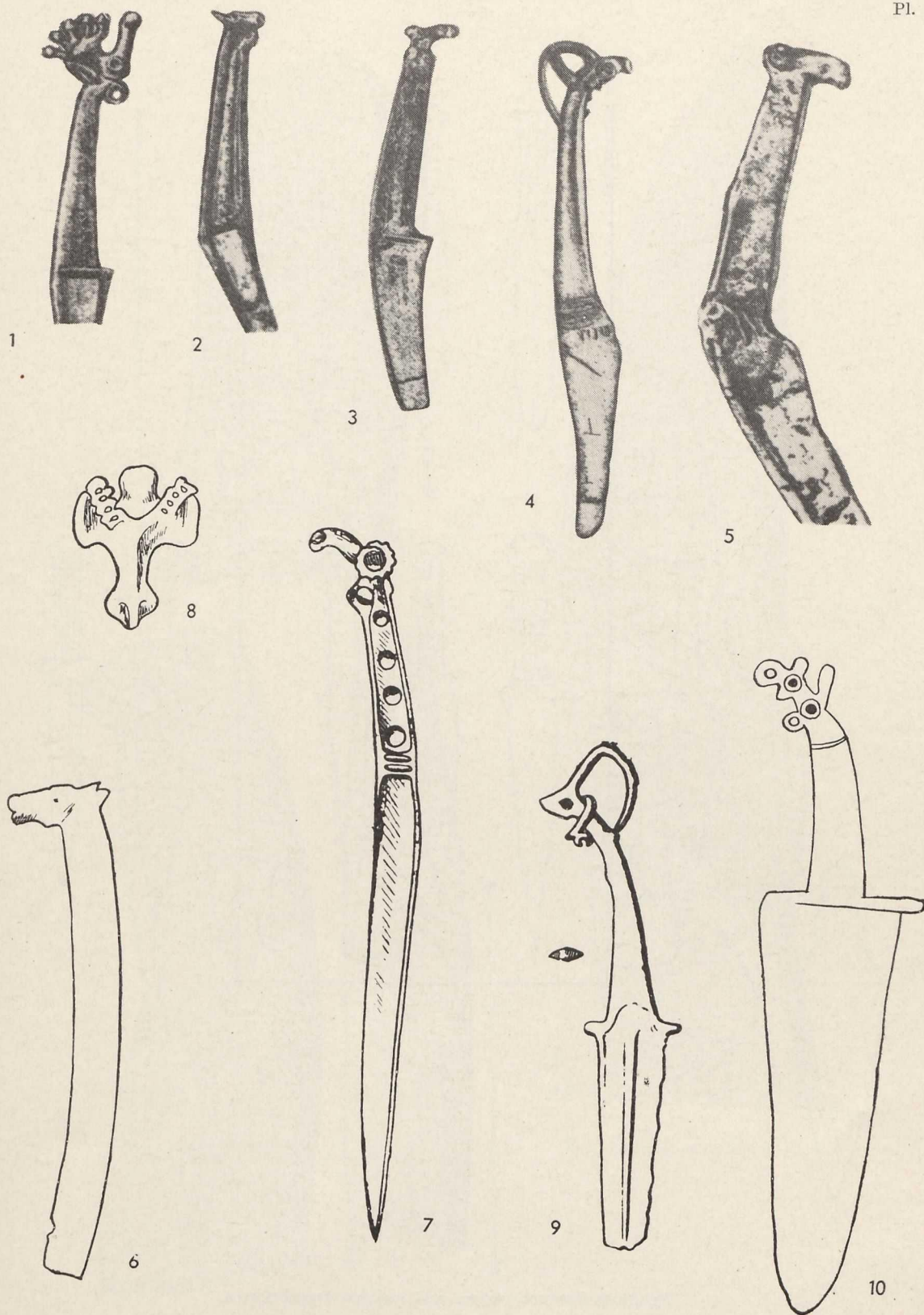


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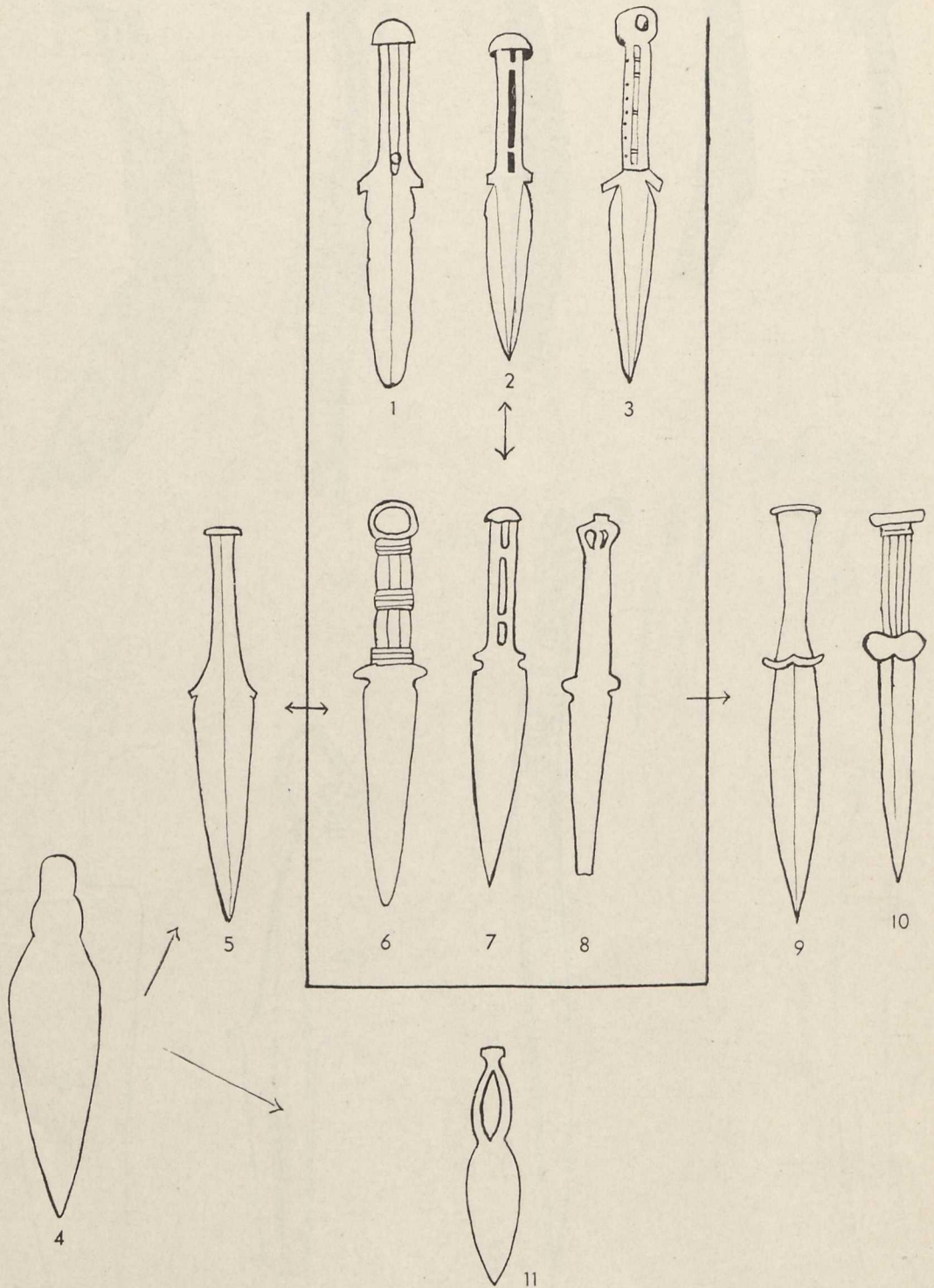
8

Evolutionary scheme of knives from Andronovo to Tagar.
Drawings after Tallgren, Collection Tovostine pl. V.



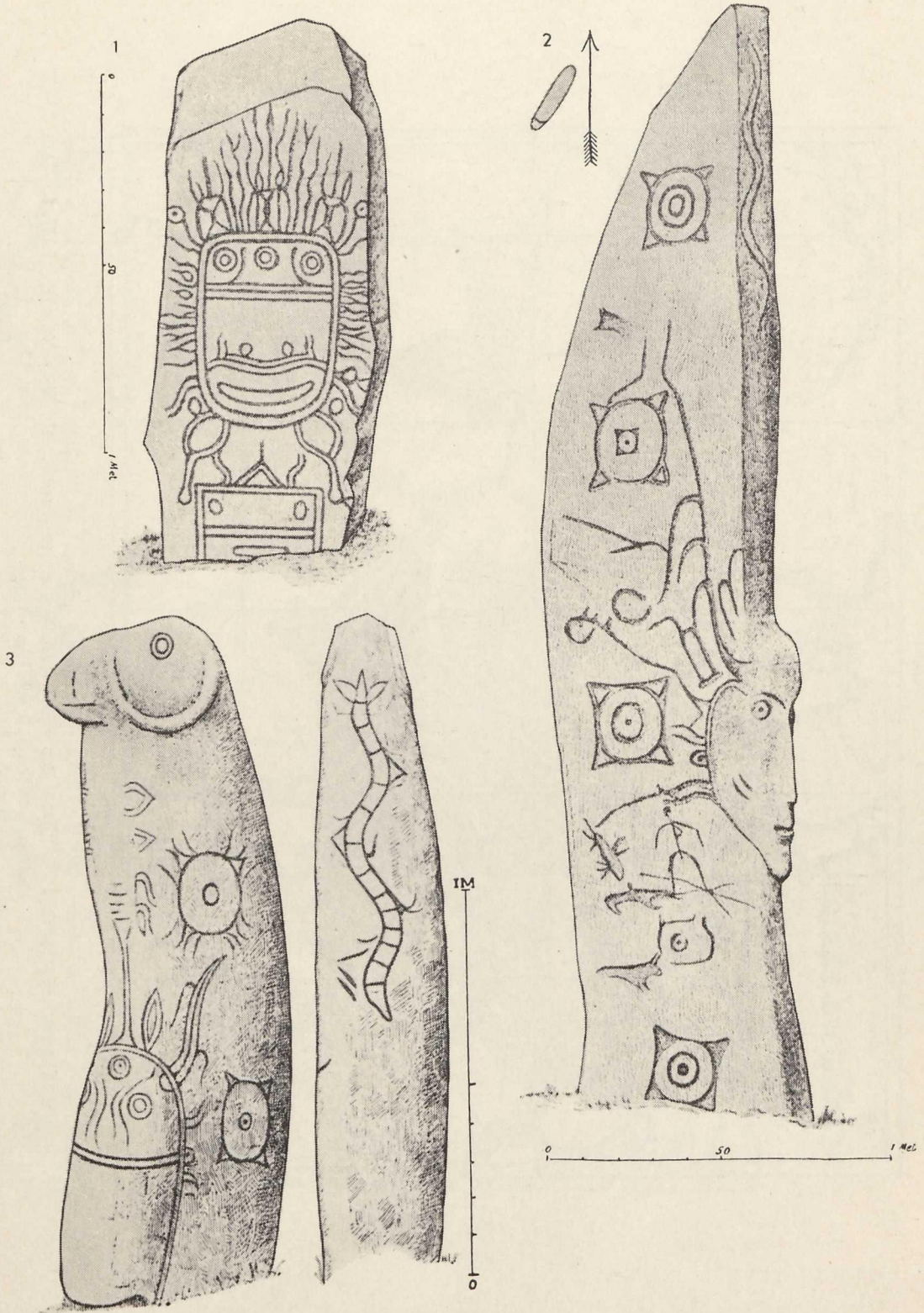
Knives and daggers with animal heads.

1—5 stray finds of the Minusinsk Basin (Karasuk); 6 stray find of the Minusinsk Basin (Late Karasuk/Tagar); 7 burial find near Abakan (Minusinsk), length (of the preserved part) 31.5 cm. (originally 35 cm.), breadth 3 cm. (Karasuk); 8 head terminal of 7; 9—10 animal head daggers. Eastern sub-group (not Minusinsk), 9 Koto Köl, 10 An-yang. 1—5 after Kiselev 1949, 6 and 10 after Karlgren 1945, 7—8 after Lipskii 1949.



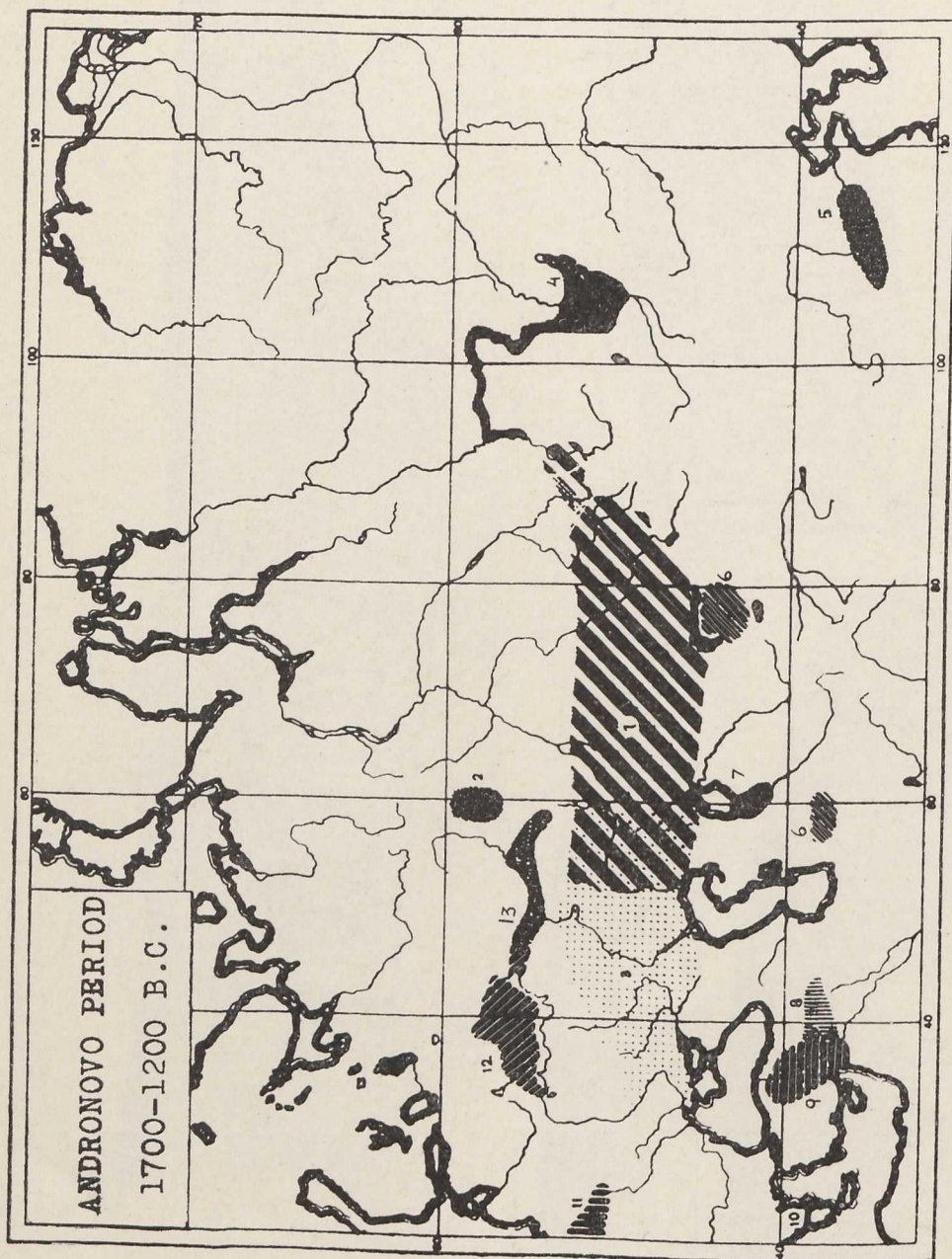
Relations between eastern and western dagger forms.

1—3 Ordos; 4 Andronovo type; 5 transitional form Andronovo/Karasuk? Minusinsk; 6—8 Karasuk, Minusinsk basin; 9—10 Tagar daggers, Minusinsk basin; 11 late Andronovo of the West. 1—3 after Loehr 1949 b, 4, 5, 11 after Tallgren, 6—10 after Kiselev.

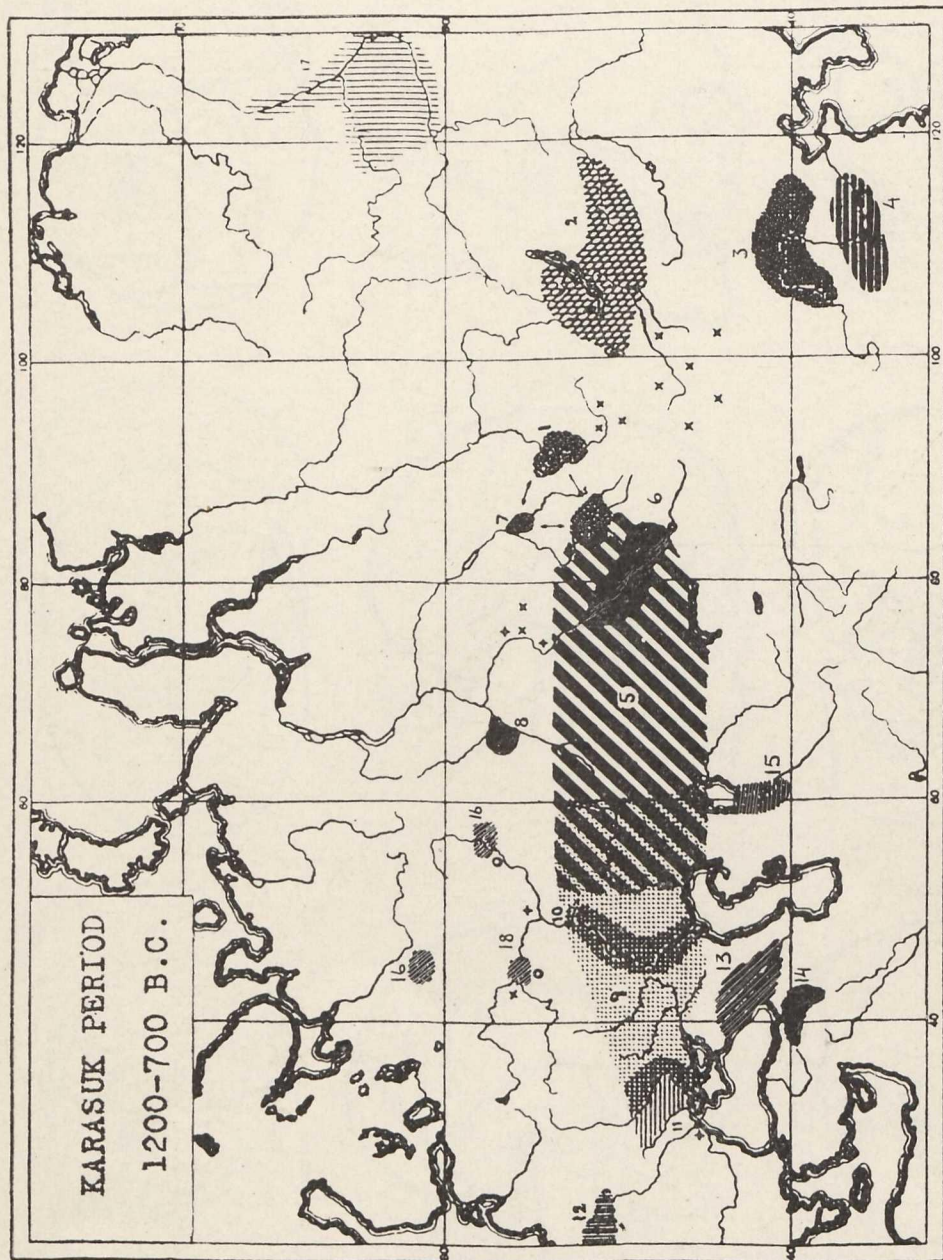


Typical Karasuk steles.

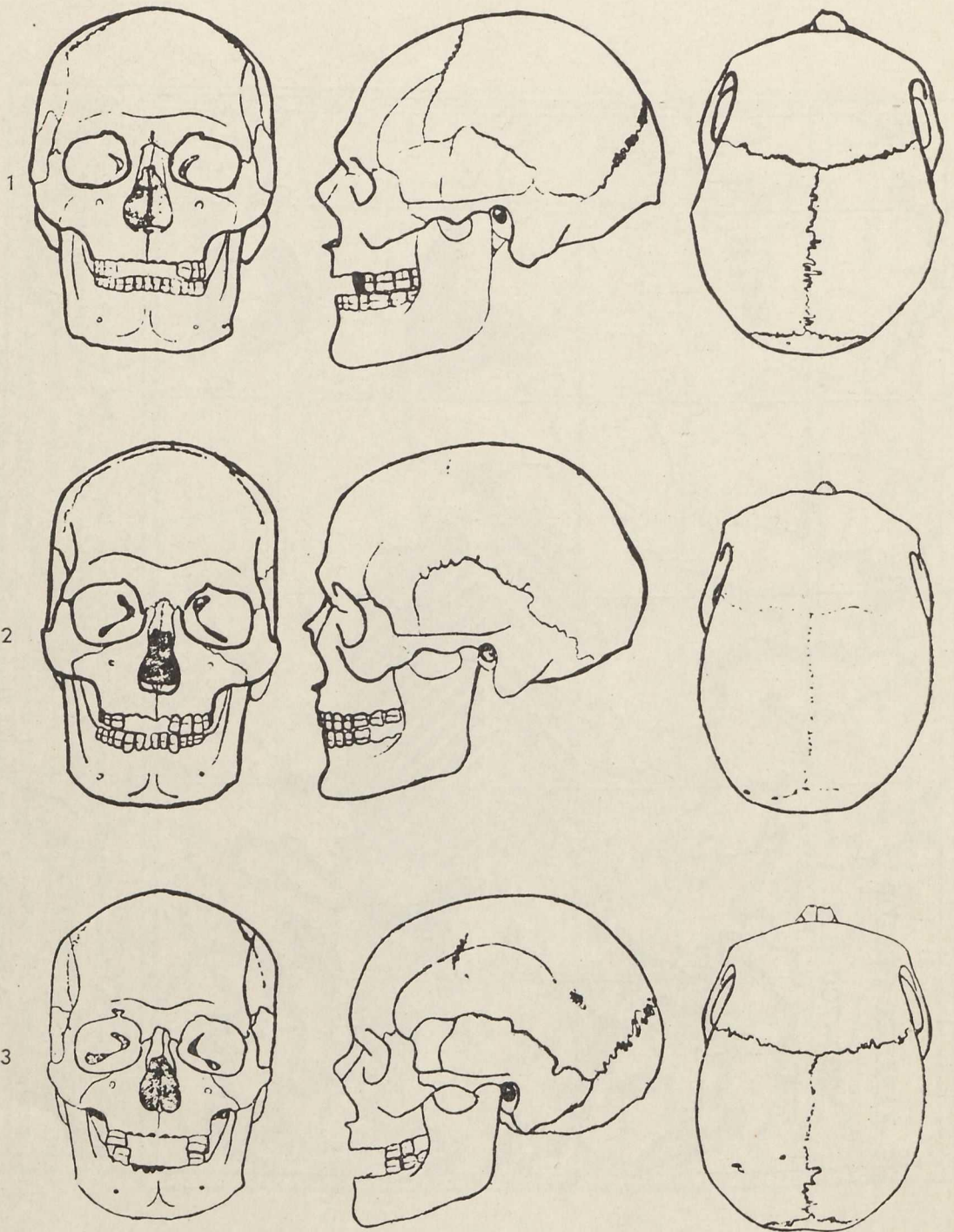
1 Tasmin stone I; 2 Tasmin stone II; 3 Chamak stone b (after Appelgren-Kivalo).



1. Andronovo tribes, 2. Shigir tribes, 3. Tribes with «timber graves», 4. Glazkovo tribes, 5. Shang-Yin territory, 6. Sites with Andronovo pottery, 7. Tazabagiab tribes, 8. Assyria, 9. Hittites, 10. Mykenae, 11. Amuyetits tribes, 12. Fatianovo tribes, 13. Abashevo tribes. After Kiselev 1949.

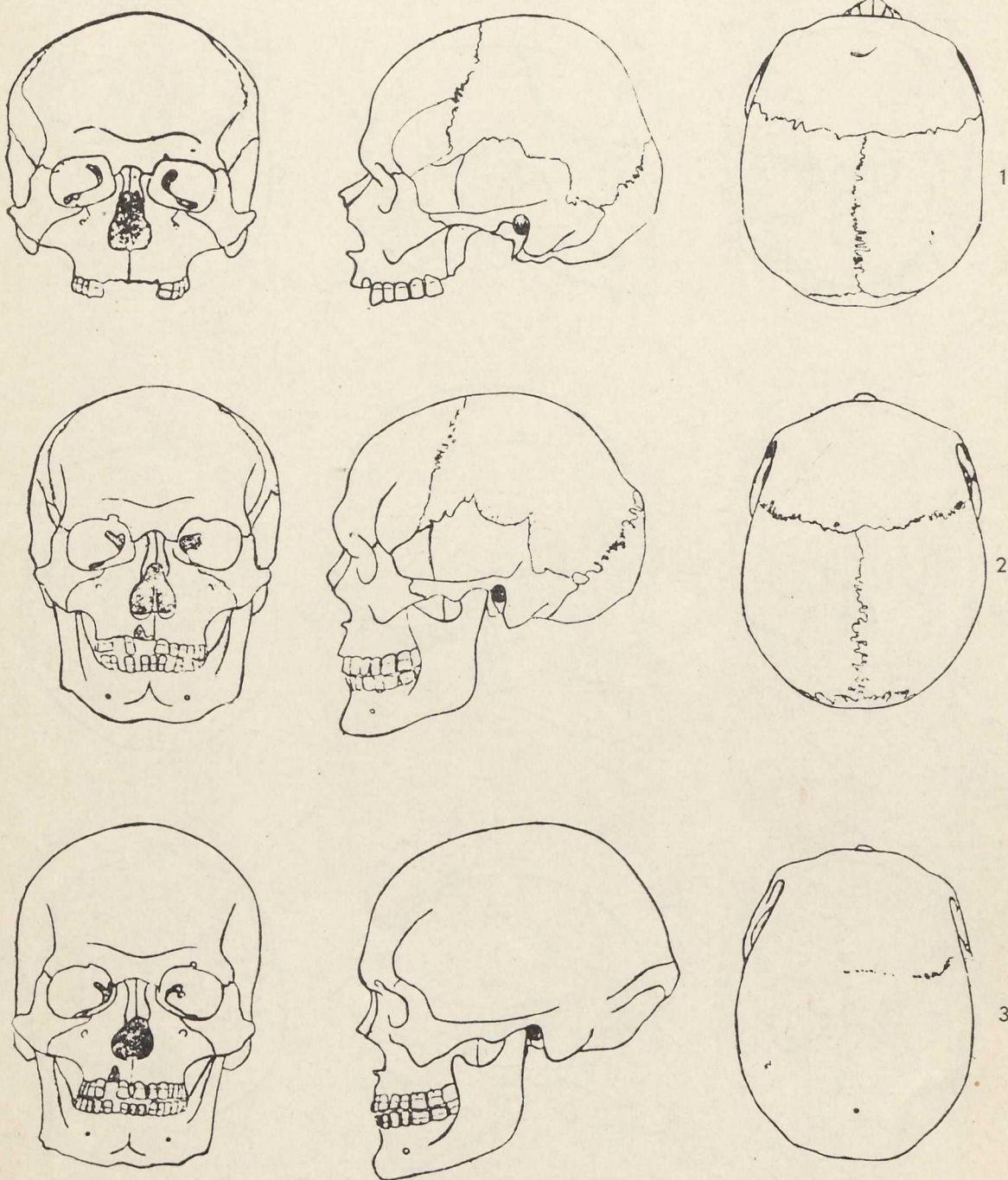


1. Karasuk tribes. 2. Tribes with «coffin graves». 3. North Chinese tribes. 4. Chou territory. 5. Andronovo tribes. 6. Region of the Kazakhstan Bronze. 7. Tribes of Tomsk. 8. Tribes of Andreievsk. 9. Tribes with «timber graves». 10. Khvalinsk tribes. 11. Cimmerian tribes. 12. Lausitz tribes. 13. Caucasian Bronze (Koban). 14. Mitanni. 15. Amirabad tribes. 16. Seima cemeteries and treasure finds. 17. Bronze Age of Yakutia. × Karasuk stray finds. + Rings of white nephrite. After Kiselev 1949.



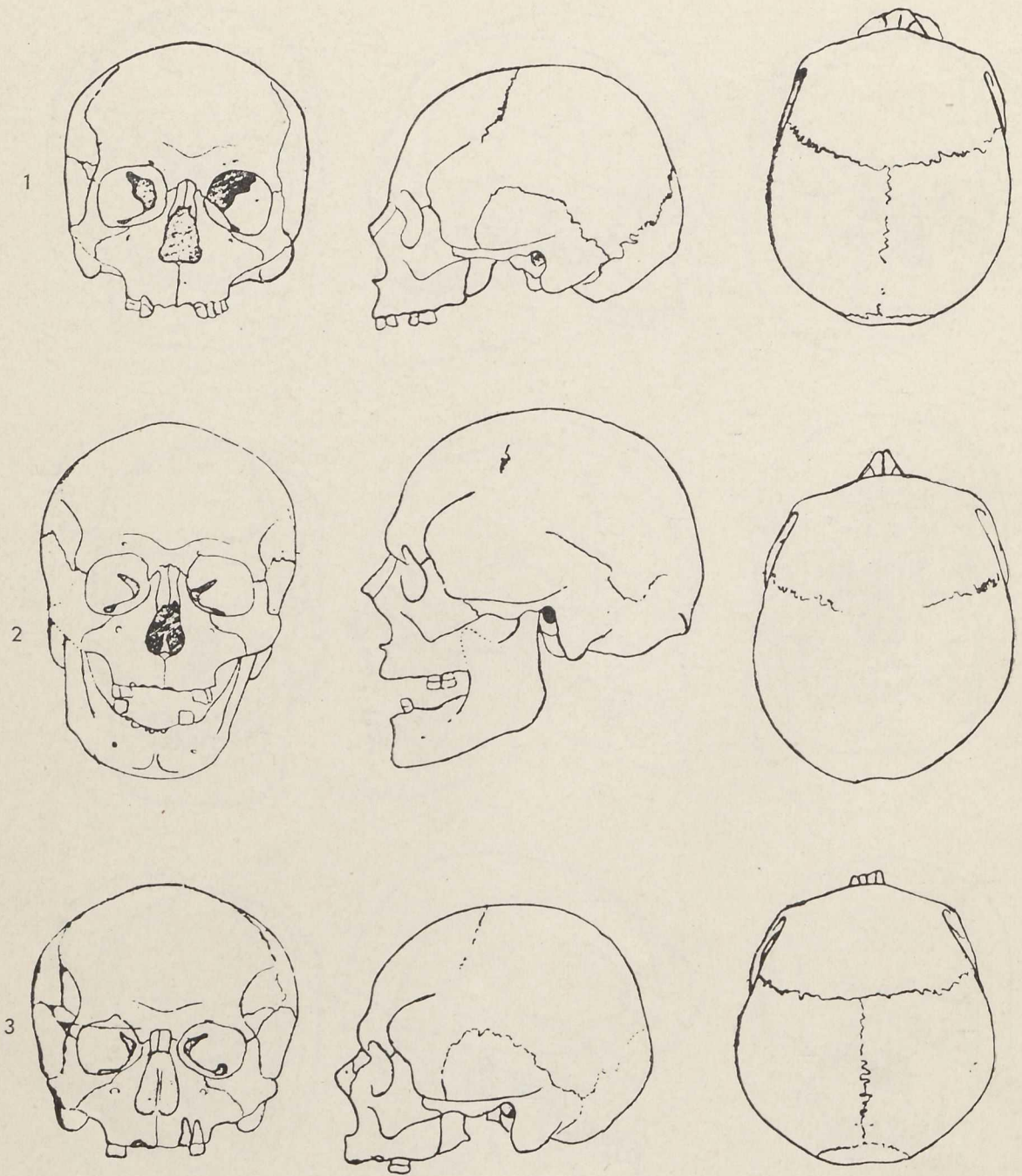
Skulls of Afanasievo burial sites (after Debets 1948).

1. Male skull of Kuroti II kurgan 9 burial 6 (Altai), excavated by Kiselev 1937, GMA Nr. 8559.
2. Male skull of IAr-ulagan burial 1, excavated by Rudenko GEM, drawings by M. N. Komarova.
3. Male skull of Ust Tes (Minus. area) Kurgan 10 burial II, excavation by Kiselev 1932, GMA Nr. 8219.



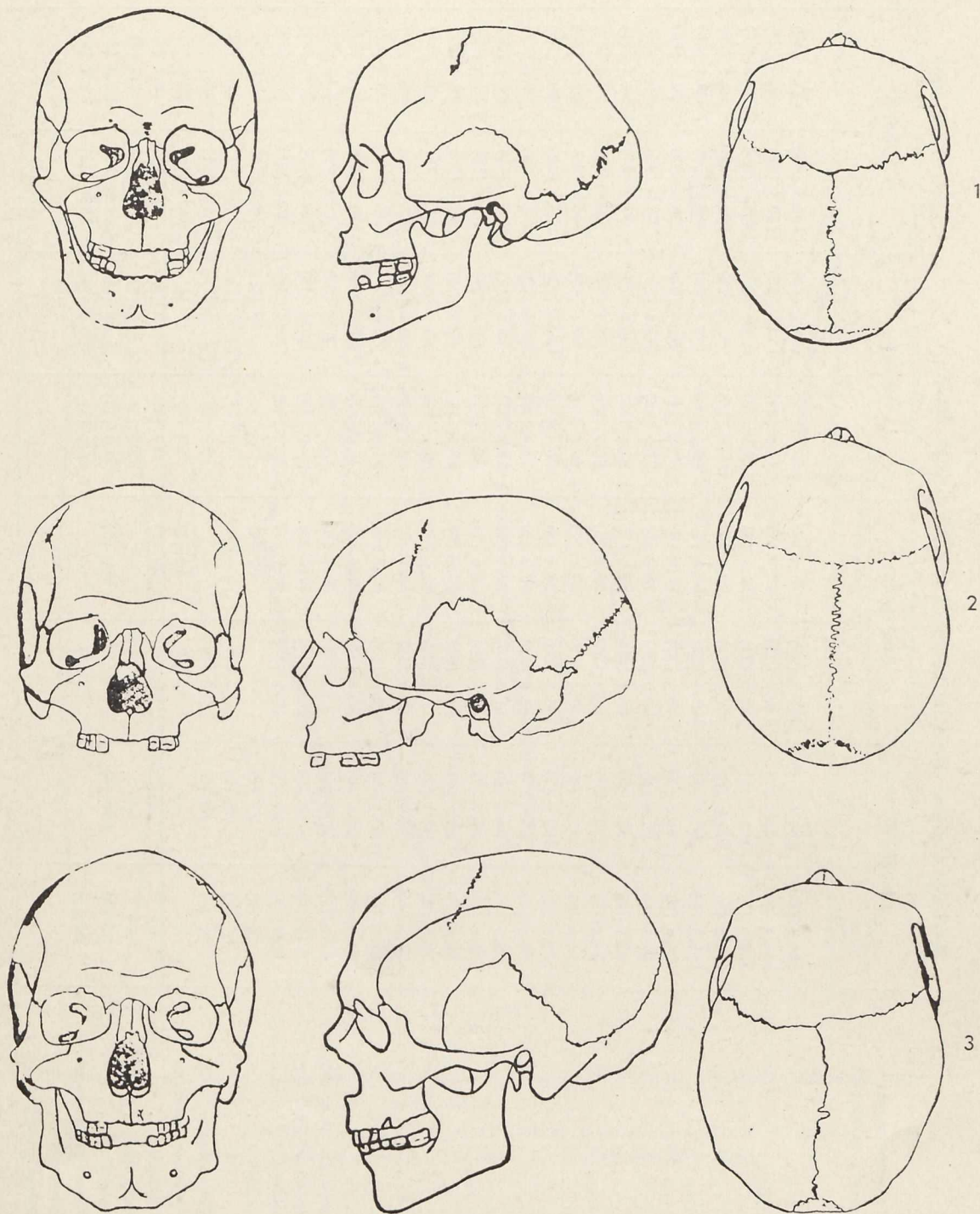
Skulls of Andronovo burial sites (after Debets 1948).

1. Male skull of Ust Ierba (Minusinsk area) cemetery 2 burial 2, excavated by Kiselev, GMA Nr. 7879.
2. Male skull of Orak (Minusinsk area) cemetery 22 a, excavated by Sosnovskii, MAE Nr. 3390—8.
3. Male skull of Orak (Minusinsk area) cemetery 16, excavated by Sosnovskii, MAE Nr. 3390—6.



Skulls of Karasuk burial sites (after Debets 1948).

1. Female skull of Ust Ierba (Minusinsk area) cemet. 26 burial 3, excavated by Kiselev 1932, GMA Nr. 7890.
2. Male skull of Chernovo village (Minusinsk area) cemet. 28, excavated by Sosnovskii 1929, MAE Nr. 4062—3.
3. Male skull of Chernovo village (Minusinsk area) cemet. 18, excavated by Sosnovskii 1929, MAE Nr. 4062—2.



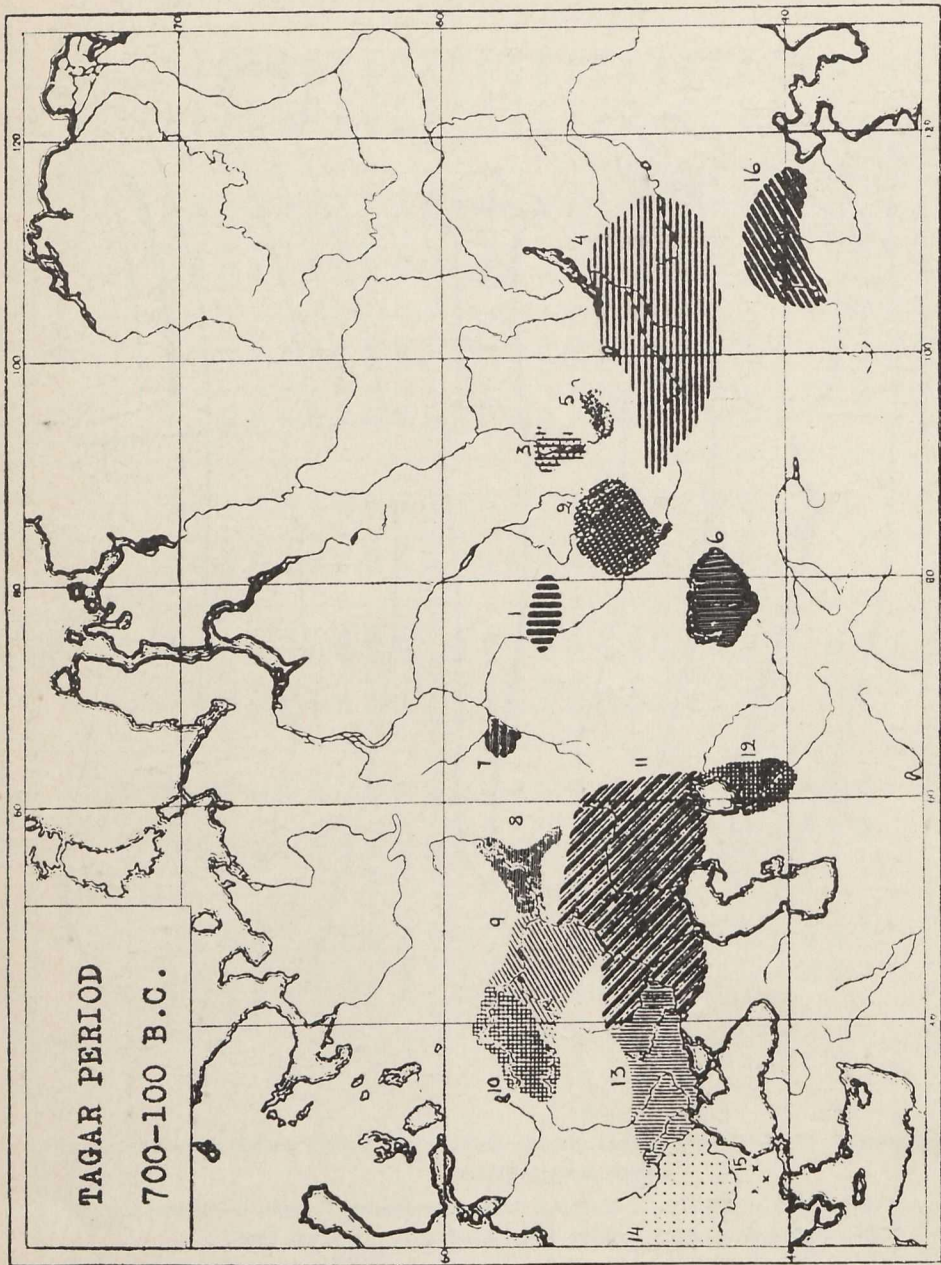
Skulls of Tagar kurgans (I) = (early Tagar), after Debets 1948.

1. Female skull near Ust IERba village (Minusinsk area) kurg. 2 bur. 2, excavated by Kiselev 1932, GMA Nr. 7871.
2. Male skull near Ust IERba (Minusinsk area) kurg. 5 bur. 1, excavated by Kiselev 1932, GMA Nr. 7875.
3. Male skull of kurgan 4 near Krivinskoe (Minusinsk area), excavated by Kiselev, GMA Nr. 8456.



Western representatives of the heavy inward-curving knives with animal terminals compared with south-eastern types.

1 Seima dagger (1/2); 2 Seima (1/3); 3—4 Turbino, Irkutsk museum (3=1/3); 5—6 An-yang. 1—3 after Tallgren, 4 after Kiselev 1949, 5—6 after Karlgren 1945.



1. Tribes of the Omsk region. 2. Matimirian tribes. 3. Tagar tribes. 4. Tribes with «stone tombs». 5. Tribes on the upper Yenisei. 6. Tribes of the Balkash region. 7. Tribes of Andreyevsk. 8. Ananino tribes. 9. Gorodishche tribes. 10. Diakovo tribes. 11. Savromatian tribes. 12. Khoresm. 13. Scythian tribes. 14. Zone of Scythian influence on the West. 15. Thracian kurgans. 16. Late Bronze Age of North China. After Kiselev 1949.