

ECONOMY AND SOCIAL SYSTEM IN CENTRAL ASIA IN THE KUSHAN AGE*

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DURING the period of the Kushan Empire, great progress was made in the social and economic life of the peoples of Central Asia. The economic prosperity they enjoyed was due to a number of factors: (a) the unification of the greater part of Central Asia's ancient agricultural regions under the authority of a single empire; (b) the maintenance of political stability over long periods; (c) the rapid development of farming (with crop irrigation) and handicrafts; and (d) the expansion and strengthening of trade relations with India, China and the countries of the Near East. With the expansion of internal and international trade, and the development of economic relations in Central Asia, agriculture, which had already played a major role in the country's economic development, acquired even greater importance. In countries with inadequate rainfall, agriculture, the backbone of ancient civilizations, has always depended on artificial irrigation and many aspects of the social and

* See Maps 4, 5 and 6.

economic life of the peoples of Central Asia in the Kushan period are closely linked with irrigation as an element in agricultural production and general prosperity.

Irrigation

Archaeological evidence reveals intensive exploitation of new agricultural land and the expansion of agricultural oases at the beginning of the Christian era in the river valleys and ancient agricultural oasis areas of Central Asia, especially in the southern regions, even though the best and most suitable croplands were by that time already under cultivation. It has also been established that, with the opening up of new regions and the extension of crop-farming to the northern provinces of Central Asia on the lower reaches of the Zerafshan, on the middle reaches of the Syr Darya and in the Tashkent oasis, large numbers of nomadic livestock-breeders switched to a settled way of life and new centres of urban civilization were formed. As a result of the extensive development of irrigation networks, practically all the main provinces of Central Asia were brought under cultivation during this period and the establishment of the major crop-growing oases was completed. The extent to which northern Bactria was populated and brought under cultivation at this time can be judged from the 117 archaeological monuments of the Kushan period recorded in recent years in the territory of Surkhan Darya province.¹ A major channel, the Zang canal, leading from the Surkhan river, was constructed. In the zone irrigated by it a new oasis, the Angor, was established around the town of Zar-tepe.² The founding of Dalverzin-tepe as a major urban centre also dates back to this period. The Surkhan Darya and Sherabad Darya valleys, with their flourishing agricultural oases, fortified towns and extensive grazing lands, were able to provide a strong base for unifying the domains of the Yüeh-chih on the right bank of the Amu Darya. When they were unified by the ruler of Kuei-shuang, who subjugated the four other Yüeh-chih principalities, the nucleus of the Kushan Empire was formed.

This was the time when large-scale irrigation systems were developed in the Zerafshan and Kashka Darya valleys and the Tashkent oasis. The major irrigation works constructed in the Samarkand oasis and which carried water from the Zerafshan river were the Bulungur and Payarîk canals on the right bank, the Dargom and Narpai canals on the left bank, and the Ishtîkhan and Naukinsk systems in the Miyan-kala territory. Some of these extended over a distance of more than 100 km. In the Bukharan part of the Zerafshan valley, the river fed the Kanimekh (Kanimug), Kharkan Rud, Zandana and Ramitan Rud canals on the right

¹ Rtveladze and Pidaev, 1981.

² Masson, 1981.

bank, and the main canal, the Shah Rud (Rud-i Zar) and many others on the left bank.³ As a result of the development of irrigation in the Zerafshan river valley, a vast area was supplied with water and brought under cultivation. According to our calculations, some 3,400–3,500 km² of land along the lower reaches of the Zerafshan alone were irrigated in the period from the first to the fourth century A.D. The western boundary of these ancient irrigated lands, which today passes through the sands of Kyzyl Kum, was then at certain points situated some tens of kilometres beyond the present-day limits of the Bukhara oasis.⁴ Thus, during the Kushan period, practically the entire flood-plain of the Zerafshan valley was brought under cultivation, and the two large agricultural oases of Samarkand and Bukhara were established.

During the same period, a number of major irrigation systems – the Rudaksa Kasan, Faizabad, Nasaf-Denau, Kamashi and many other canals – were built along lower reaches of the Kashka Darya river. Many fortifications, settlements and farmsteads of the Late Kushan period were constructed in the vicinity of these canals, especially in the third and fourth centuries A.D. The establishment of ancient Nakhshab oasis and its centre, the town of Er-kurgan, was completed.⁵ The oasis covered some 1,500–1,600 km².

The construction of the Salar-Karasu-Dzhun irrigation system in the second and first centuries B.C. gave impetus to the development of the agricultural oasis of ancient Tashkent. The origin of crop-raising on the territory of the Chirchik-Ahangaran basin dates back to an earlier period. However, as the Buzgon-tepe, Taukat-tepe, Kugait, Shash-tepe and other archaeological monuments located in the irrigation zone of the Salar-Karasu-Dzhun system show, the intensive application of irrigation in that region and the urbanization of a part of its settled area began at the dawn of the Christian era.⁶ One characteristic feature of the establishment of the Tashkent agricultural oasis is the fact that all the lands comprised in it were not brought under cultivation at the same time. Priority was given to the use of water resources for irrigation areas which were most favoured by natural conditions and were, for the most part, situated in regions adjacent to the water supply.

Traces of irrigation systems of the Kushan period are found in the upper Zerafshan, Kafirnigan and Vakhsh river valleys in Tajikistan. The northern and western sectors of the Vakhsh valley were watered by the ancient Dzhuibar canal, which was built in the second and third centuries A.D. Remains of this canal, in the form of embankments 18 m wide

³ Mukhamedjanov, 1978.

⁴ Ibid.

⁵ Kabanov, 1977, 1981.

⁶ Buryakov and Filanovich, 1972.

and up to 2.5 m high, have survived in the region of Urtaoz, extending over a distance of 12 km.⁷

In the Kushan period, in the Ferghana valley, prior to the building of the main canals leading off the Syr Darya, one of the two great rivers of Central Asia, a complex off-shaped irrigation systems providing water for individual agricultural oases was established at the base of the Isfara, Sokh, Shahimardan (Margelan), Isfayram, Aravan and other mountain river gorges. At the head of each system there was usually a large fortress, which provided a vantage point from which the distribution of water could be strictly regulated. For example, the Sari-kurgan fortress stood at the head of the Sokh river system. Archaeological material indicates that the formation of complex multi-branch irrigation systems, the rapid expansion of irrigated areas and the emergence of a large number of fortified settlements in the Ferghana valley all took place in the first centuries A.D.⁸

The development of irrigation and the expansion of irrigated areas in Central Asia during the Kushan period have been thoroughly investigated along the lower reaches of the Amu Darya and Syr Darya where irrigation was practised in ancient times. During this period, entire networks of canals were built and brought into operation in Chorasmia. For example, major canals such as the Gaukhora, Toprak-kala (right-bank Chorasmia), Khaikhanik, Vadak and Buva canals, the left-bank canal originating in Daudan (left-bank Chorasmia) and many others were all built during this period. It was a time of considerable growth in the oases of the Bazar-kala and Guldursun canals, which were built as early as the fourth and third centuries B.C. A large branch canal which was built off the Toprak-kala canal irrigated the Sultan-Uizdag foothills. The fortress of Ayaz-kala was erected on the edge of the newly cultivated lands. Following the reinforcement of the Gaziabad-Chermenyab irrigation system, the Kandumkala and Kardarankhas fortresses were restored and new fortresses and towns built. These included the Zamakhshar (Izmukshir) fortress, Khiva, the Devkeskan fortress on Chink of the Ustyurt and many others.⁹

The discovery and detailed study of the remains of ancient irrigation systems along the lower reaches of the Amu Darya have shown that in the Kushan period Chorasmia had the most highly developed of all the ancient irrigation systems (Fig. 1). Progress in irrigation engineering took the form of improvements in the systems of water supply, and made changes in the section of the main canals. The archaic broad (20–40 m wide) and shallow canals were replaced during the period by narrower canals with deeper sections. At the same time the canals were considerably lengthened, and extended by many kilometres.

⁷ Zeimal, 1971.

⁸ Gulyamov, 1974.

⁹ Gulyamov, 1957.

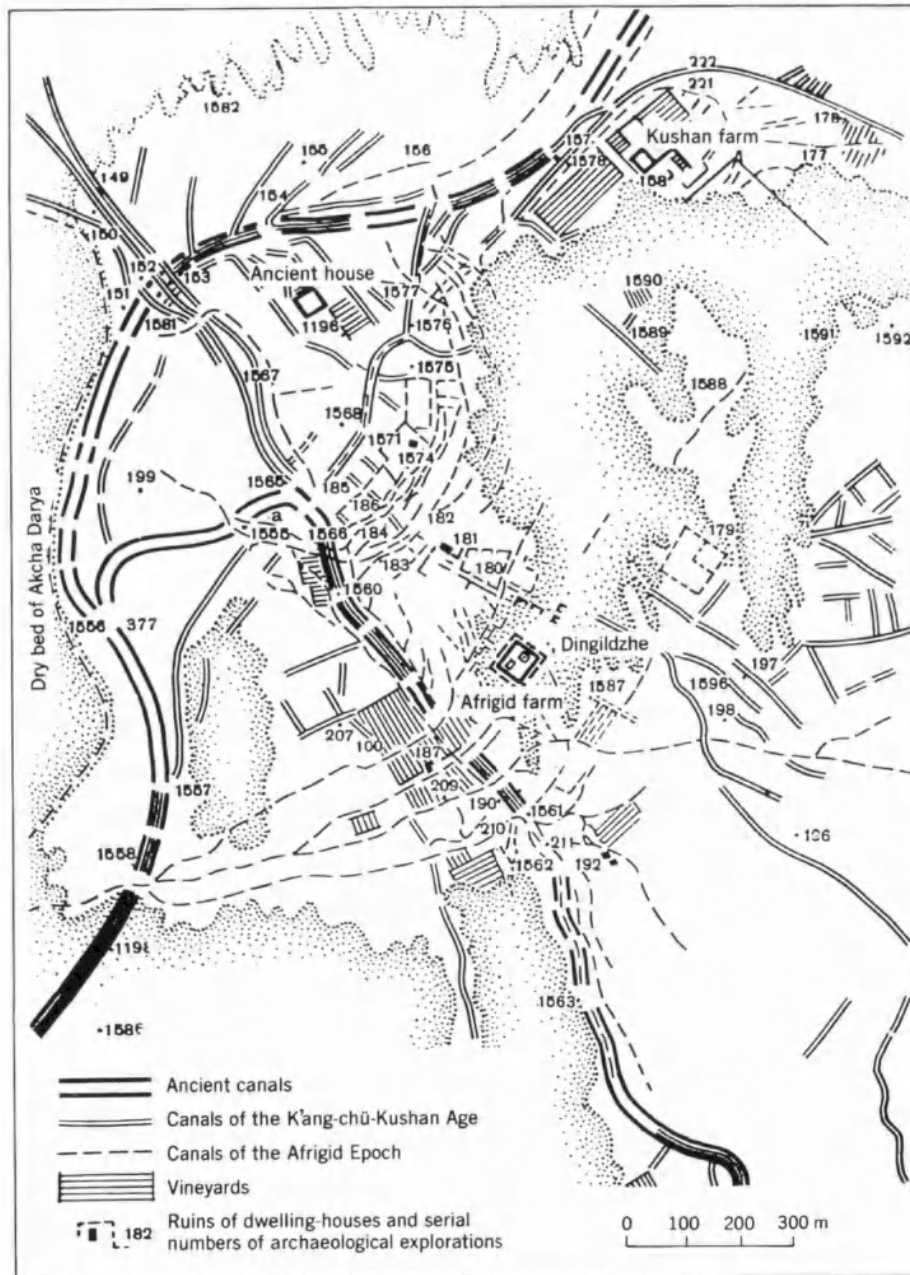


FIG. 1 Irrigation system of ancient Chorasmia. Canals in the environs of Dirgildzhe. (Courtesy of B. V. Andrianov.)

The number of smaller local systems was reduced and these were amalgamated with much larger irrigation systems, shifting the main water intake further upstream. The process of carrying water to the fields was improved and various water distribution devices were introduced. Irrigation was effected in accordance with a specific flow pattern: main river, head, main canal, distribution canal, irrigation canal and fields. The total length of one of the largest canals of the period, known as the ancient Kîrkîz canal (right-bank Chorasmia),

was 90 km. It watered numerous fields for cultivation purposes. The surviving portions of a canal of the K'ang-chü period (fourth century B.C. to first century A.D.) measure as much as 20 m from bank to bank; those dating from the Kushan period (second and third centuries A.D.) measure only 10–11 m, but have steep sides and are much deeper. The creation and maintenance of major irrigation systems of this kind obviously called for extensive earth-moving operations, the installation of sophisticated structures at the head of the system and constant dredging to prevent silting up. It has been calculated that over 222 million m³ of earth were removed in digging the Kîrkkîz canal, a task which took 15,000 labourers two months to complete. Some 6,000–7,000 labourers were used annually to keep the canal clear of silt and maintain it in working condition.¹⁰ Deep central canals extending over long distances proved more helpful than the broad and shallow canals of ancient times. S. P. Tolstov, in his observations on the ancient irrigation works of Chorasnia, concluded that by late antiquity they had been completely rebuilt. The archaic and classical irrigation systems of the K'ang-chü period were in many respects superior to those that were fully developed in the Middle Ages.¹¹

In the K'ang-chü–Kushan period, when irrigation systems reached their highest level of development, the area under irrigation along the lower reaches of the Amu Darya and Syr Darya totalled 35,000–38,000 km² (13,000 km² on the lower Amu Darya and 22,000–25,000 km² on the lower Syr Darya).¹² Thus, in antiquity, the land area under irrigation along the lower reaches of the Amu Darya and the Syr Darya was four times greater than it is today. It must, however, be remembered that the land was not then as intensively irrigated as it is today. Although the main canals were of considerable size and length, the network of subsidiary irrigation canals was relatively small and, as a result, not more than 10–15 per cent of the land area, the irrigation zone, was directly used for crop-raising, in spite of the substantial supply of water.¹³

In addition to the extensive development that occurred in the alluvial zones of the major river valleys, the foothills and mountain regions of Central Asia were also brought under cultivation during the Kushan period, as a result of improvements in irrigation engineering and the accumulation of experience in irrigation. Since the water flow in the gorges of these regions was not abundant and the possibility of expanding the total area of irrigated land was limited, both groundwater and water from springs, which in those days were far more numerous, were used for irrigation in addition to the spring-thaw water from mountain streams. Depending on the hydrographic and geomorphologic features of each

¹⁰ Andrianov, 1969.

¹¹ Tolstov, 1962.

¹² Ibid.

¹³ Tolstov, 1969.

river valley and mountain region, different types of hydraulic works were developed. To store the limited water from mountain gorges and springs, small covered reservoirs were built inside a ravine or at the point where the gorge opened out from it. The techniques used for constructing these miniature reservoirs were very simple. The structures were either rectangular or oval in appearance, closely resembling the pens used for small livestock. Their sides were built of boulders packed with turf and they were located on the slopes of terraces above the flood-plain. They measured 50×40 m at most; the walls were up to 2 m high and 1–2 m wide. A reservoir usually had small openings in opposite walls. The upper opening was the intake and the lower one was the outlet for releasing the water into the irrigation network. The use of storage reservoirs for irrigation was typical of terraced agriculture, and in the Kushan period it was common practice in the upper Zerafshan valley and in the foothills of the Nuratau mountains. Along the northern slope of the Nuratau, at the points where streams emerge from their mountain gorges, fortified rural settlements have been identified and recorded, and around them remains of small ancient reservoirs with traces of terraced farming have been found. Archaeological evidence shows that small reservoirs with an average capacity of 1,000–1,200 m³ of water, and terraced farming using those reservoirs, were introduced in the mountain regions of Central Asia during the first centuries of the Christian era.¹⁴

In mountain valleys where there were no sources of surface water, groundwater was widely used for irrigation. It was collected for this purpose in *kahrez* or underground reservoirs, consisting of horizontal water-bearing galleries (which required a great deal of manpower to bore) and a large number of vertical ventilation shafts. The remains of a number of abandoned ancient *kahrez* have been identified and studied in the region of Kopet Dag and Babadug, in the Vakhsh river valley and along the upper Zerafshan. Archaeological investigations have shown that underground irrigation reservoirs of this kind made it possible to bring under cultivation a large area of land in the foothills of the Nuratau region, and a small agricultural oasis was established at the edge of the Kyzyl Kum Desert. In this period the whole of the upper Zerafshan valley, as far as present-day Matcha, was converted to agricultural use.¹⁵

In rugged mountain terrain, it was especially difficult to select a site for the head of a canal to be fed by a mountain river flowing down a deep gorge, and to build a canal over land that was extensively broken by ravines. The major achievements of Kushan irrigation engineering included the boring of tunnel-like water-intake channels at the heads of main canals that emerged from the sheer rock sides of a mountain river, and the construction of

¹⁴ Mukhamedjanov, 1975.

¹⁵ Staviskiy, 1961.

aqueducts across ravines or gaps in mountain ridges. Remains of ancient engineering works of this kind have been identified along the upper Zerafshan, particularly in the locality of Ravatkhadzha, at the head of the Dargom canal, which was built outwards from the Zerafshan at the beginning of our era. In the Early Middle Ages this locality was known as Vargsar, meaning 'head of a dam'. Sogdian irrigation engineers chose this locality for the head of the Dargom canal for two reasons. In the first place, the Zerafshan river narrows here and is not more than 200 m wide, whereas upstream and downstream it is much wider – in some places even 2 km wide. Secondly, the river here has very hard banks and the left bank is a mass of conglomerate rising 15 m. It was of course impossible to build the opening section of the Dargom canal through the high solid banks of the Zerafshan, and so the ancient irrigation engineers chose instead to bore a tunnel with a number of water-intake openings and wells. One of the tunnel openings measuring 1.5 m in diameter still survives at a point slightly above the present-day Pervomaisky hydro-electric power station. The ancient tunnel section of the Dargom canal probably ran almost parallel to the bank. At a later period this section was eroded by the water passing through it and the ancient water-intake of the canal merged with the water-meadow of the Zerafshan river.¹⁶ At this time also a small settlement was built in the locality of Vargsar, and it was probably here that the ancient superintendents of the headworks of the Dargom canal used to live. According to written sources, in the Early Middle Ages the inhabitants of Vargsar were required to keep watch on the Dargom canal dam as a labour duty, in exchange for which they were exempted from land taxes.¹⁷ At that time, about 40,000 people lived in Vargsar,¹⁸ which was always of major strategic importance as the main water-supply centre for the left-bank sector of the Samarkand oasis and as a point commanding the approaches to Samarkand. Whoever held Vargsar could deprive Samarkand of its water supply. In the political history of Samarkand, there are numerous examples of attempts by foreign invaders to destroy the Vargsar dam and so compel Samarkand to surrender. The rulers of ancient Sogdiana therefore did all they could to strengthen its defensive capacity, and always maintained large numbers of troops there. According to Nasafi, in the Early Middle Ages, Vargsar was defended by an army of 4,000 men and by 12,000 *ghazi* or warriors.¹⁹ Samarkand's municipal canal was known as 'Juy-i arziz' (lead canal), since the bottom of the aqueduct was lined with lead. Judging from the size of the bricks²⁰ discovered south

¹⁶ Mukhamedjanov, 1972.

¹⁷ Bartol'd, 1965, Vol. 3.

¹⁸ Nasafi, n.d.

¹⁹ Ibid.

²⁰ The wedge-shaped bricks measured 48.5 × 59 – 26 × 8.5 cm; the rectangular bricks 53 × 40 × 9 cm; and the square bricks 42 × 42 × 9 cm.

of Afrasiab near the Khasret-Khîzr mosque, the aqueduct was an arched structure about 3.8–4 m wide. The site where it was located in the Middle Ages was known as ‘Rasat-tok’ or ‘Sari-tok’ (i.e. head of the arch). In ancient times, the Samarkand authorities attached particular importance to this structure. Revenue from land along the banks of the Juy-i arziz, in the locality of Sari-tok, was earmarked for the maintenance of the aqueduct and its bridge; and the Samarkand *magi* (fire-worshippers) were required, as a labour duty, to keep the structure in good repair and to guard it the whole year round.²¹

The development of various types of water engineering works was undoubtedly attributable to the very wide practical experience of irrigation accumulated over many centuries, to the enormous expenditure of labour and to the application of special water engineering techniques by ancient irrigation engineers. Tolstov, in his study of the remains of the ancient irrigation works in Chorasmia, noted that it was precisely during the period of antiquity that a school of irrigation engineers and high priests of science emerged at Chorasmia; it remained in existence until the time of Qutayba’s campaign against Khwārizm (ancient Chorasmia). The school included experts in mathematics, water engineering, cartography, astronomy and calendrical observations, which were of great importance for an extensive irrigation economy.²² The brunt of the task of building irrigation works was, however, borne by the peasants, and many irrigation systems were dug by labourers from the rural communities, without any particular expenditure of effort or contribution by the authorities.

Thus, during the Kushan period, as farming developed and large areas of land were brought under cultivation, an extensive irrigation economy was created in the river valleys and agricultural oases of Central Asia, and this played a major role in the socio-economic and cultural life of the ancient population of the country.

Crop-raising and livestock-breeding

Agriculture attained a high level of development during the Kushan period. Its growth was primarily due to the rapid expansion of irrigation and to the fact that more land was supplied with water and brought under cultivation than at any other time in the ancient history of Central Asia. In the oases crops were grown on irrigated land, while in the foothills and mountain regions dry-land farming was widespread. Also, in the natural wetlands along the river banks, particularly on the lower reaches of the Amu Darya, certain crops were grown on semi-irrigated land.²³ The expansion of farming was, in turn, accompanied by

²¹ *Istoriya Samarkanda*, 1969.

²² Tolstov, 1957.

²³ The main crops grown on semi-irrigated land were melons, pumpkins and other gourds.

the development of agricultural equipment and improvements in methods of cultivation. During the period, iron implements were widely used for the first time and new types of implements introduced, the hoe being replaced to an increasing extent by the plough. The most important step forward in the development of farm equipment was the introduction of the wooden plough with an iron ploughshare, an extremely useful implement that is still used today in Central Asia.²⁴ The magnitude of the total area of farmland, including arable land, orchards, vineyards, etc., suggests the extensive use of the plough. Such vast stretches of irrigated land could not have been developed and cultivated with the hoe alone.

Written sources and archaeological finds indicate that the crops produced during the period under consideration were highly diversified. Different varieties of grain, fruit stones and other vegetable remains discovered in archaeological excavations show that the crops produced during the period included practically all the crops known in the Middle Ages: cereals (millet, barley and wheat), fruit crops (apricots, peaches, plums, grapes, melons), industrial crops (poppy seeds),²⁵ fodder crops (lucerne), sesame seeds and pieces of cotton fabric have been found.²⁶

written sources dating from the end of the second century B.C. to the beginning of the first century A.D. provide extremely valuable information about the ancient farming system of the Ferghana valley. They describe Ta-yüan (Ferghana) as a province with a developed agriculture and specialized horse-breeding farms. A Chinese ambassador who visited Ferghana in 128 B.C. wrote that Ta-yüan comprised some seventy large and small settlements with a population of 100,000 who tilled the land, sowed barley, rice and lucerne and grew grapes.

As the result of a process of selection, transmitted from generation to generation, various high-yield crops adapted to local conditions were developed. It should be noted that the Chinese copied the practice of growing lucerne, grapes and walnuts from the farmers of Central Asia. Evidence of the increased diversity of agricultural crops and of the great size of certain stretches of arable land is provided both by archaeological finds and by the variety of the cultivation/irrigation systems and the melon fields identified in the ancient irrigation zone of Chorasmia. Of particular interest in this regard are the systems used for the irrigation of vineyards and melon fields in farmsteads west of Dzhanbas-kala. Here, the alternation of narrow (1.2–1.8 m) and wide (3.3–4.4 m) strips is clearly visible from the colour of the soil and, in places, from the microrelief. At the edges of the vineyard there are traces of a narrow rectangular building, with a row of nine large Kushan clay vessels

²⁴ An iron plough-head was found during the excavation of the Tal-i Barzu site in Samarkand.

²⁵ Poppy seeds were found during excavations of the Late Kushan settlement of Kzilkîr (Bukhara oasis).

²⁶ Tolstov, 1962.

dug into the ground (Figs. 2 and 3). In one of the buildings a ceramic figurine of a man with a bunch of grapes has been found, and this, together with other evidence, proves that grapes were once grown on these fields with alternating wide and narrow strips. A number of cultivation/irrigation layouts of this kind were brought to light and investigated in the neighbourhood of Koy-Krîlgan-kala, and many grape-pips and graphic representations of grape-pickers were found there.²⁷ N. M. Negrul, a palaeobotanist, has ascertained that the pips came from a variety of grapes used for wine-making and from large-size table grapes.²⁸ According to archaeological data, wine-growing was also extensively developed during this period in other provinces of Central Asia, in the Bukhara oasis, in the Ferghana and Merv valleys and in Parthia. One document from Nisa even records the receipt of wine from vineyards in eastern Parthia,²⁹ and it is no wonder that the Chinese were struck by the development of wine-making in the Ferghana valley. Chinese chroniclers noted the presence of flourishing vineyards and a wine industry in the Ferghana valley, and recounted that rich Ferghanians stored large quantities of wine and that old wine preserved its qualities over several decades.

It should be noted that the agricultural oases in the provinces of Central Asia did not all reach the same level of development during the period under consideration. The ancient agricultural oases, and especially their central areas where there were irrigation systems with abundant water supplies, were the most advanced from the agricultural standpoint. In these areas several types of crops were grown. In areas where regular irrigation was not possible, on the periphery of the ancient Chorasmian oases and along the lower reaches of the Syr Darya and the Zerafshan, especially in the north-eastern section of the ancient Bukhara oasis, in the Karshi and Tashkent oases and in the Ferghana valley, where there are vast foothills and forest-steppe pasture lands, the population engaged in mixed farming. Crop-raising was combined with livestock-breeding, and only one type of crop was grown, usually barley, millet or the fodder known in Bukhara as *alapi-gau*.

Both before and during the Kushan period, livestock-breeding played a prominent role in the economic life of the ancient people of Central Asia. It provided draught animals for agriculture and transport, meat, milk and dairy products for nutrition, and wool and hides for handicrafts. In this period, according to the written sources and archaeological evidence, cattle, sheep, goats, horses and camels were bred in Central Asia. In the oases, people kept livestock in sheds and stables near their homes; in the steppes and foothills, animals were put out to graze on pasturelands; and in the mountainous regions

²⁷ *Koy-krîlgan-kala*, 1967.

²⁸ Andrianov, 1969.

²⁹ D'yakonov and Livshits, 1966.

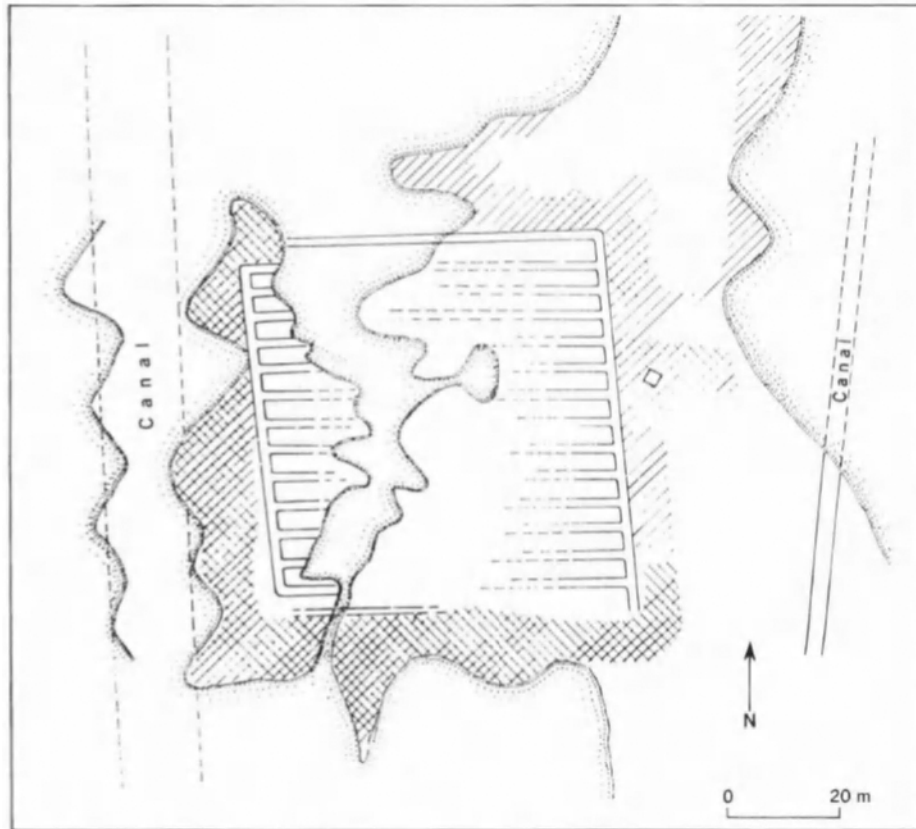


FIG. 2. Plan of an ancient vineyard in Chorasmia.

they grazed on mountain grass, a practice related to the semi-nomadic way of life of some of the population. Horse-breeding played an important role in the life of Ferghana. This is clear from the frequent references made by Chinese authors to large numbers of 'splendid horses' from their reports of the Ferghanians' 'prowess in shooting from horseback'. The Aravan petroglyphs of horses were probably carved during the period under consideration.³⁰ Judging from the evidence we have of the cultivation of lucerne, it may be assumed that the inhabitants of the Ferghana valley not only drove their herds of horses out to graze on mountain pasturelands but also kept them in stalls.

Cattle and horses accounted for a large proportion of the animals bred in Chorasmia; in the Bukhara oasis, sheep, goats and camels were common; and in the Tashkent oases, both small and large livestock were raised. The K'ang-chü regarded the ram as a noble animal. Farn, one of the Zoroastrian gods, was depicted in the form of a ram, and the handles of vessels were also shaped like rams. Ferghana horses were especially prized and were exported in large numbers beyond the borders of Ferghana. The two-humped Bactrian

³⁰ Bernshtam, 1952.



FIG. 3. Traces of an ancient vineyard in Chorasmia. (Courtesy of B. V. Andrianov.)

camel was famous in the countries of the East as a strong pack animal, suitable for caravans transporting merchandise over the difficult trade routes that crossed the arid desert. Further evidence of the importance of livestock-breeding in the life of the population of Central Asia in ancient times is provided by the numerous finds of statuettes of camels, horses, rams, etc., during the excavation of archaeological monuments. According to the estimates of the palaeozoologist A. B. Bashyrov, 61.6 per cent of the animal bones found during excavations at the Kushan site of Zar-tepe (Surkhan Darya valley) were remains of sheep and goats, 21 per cent were remains of cattle, 8.6 per cent were from asses, 4 per cent were from pigs, 2.6 per cent from horses and 2 per cent from camels. It must be noted, however, that although the inhabitants of Tashkent and Ferghana at that time followed a settled way of life and were engaged in crop-raising, livestock-breeding and highly artistic handicraft work, careful study and analysis of written and material sources indicate that ancient Ta-yüan (Ferghana) and Chach (Tashkent) were less developed economically than Parthia, Bactria and Sogdiana.

Handicrafts and building

One characteristic feature of the economy of Central Asia in the first to the third century A.D. was the considerable increase in handicraft production, which came to assume

considerable importance in the life of the country. This was to some extent due to the development of irrigated agriculture, which provided the necessary raw materials, and to the expansion of trade, which opened up new markets for the sale of hand-crafted products. Another contributory factor was, of course, the rise of the Kushan Empire.

The rich quality of the material culture remains of that period demonstrates clearly that high levels of development were attained by different branches of handicrafts such as ceramics, metal-working, iron-forging, weaving, jewellery-making, etc. People in large towns and small settlements alike practised a wide variety of handicrafts. Pottery was especially well developed at this time. Archaeological excavations have brought to light not only large quantities of ceramic products but also the remains of a whole pottery works containing several kinds of kilns. Both ceremonial and table ware of various kinds and shapes were produced in these kilns. The thin-sided goblets, bowls, cups and other types of ceramic products from the sites of Afrasiab, Er-kurgan, Bukhara and Dalverzin-tepe (Surkhan Darya), from the Tupkhan burial ground (in Hissar) and from other such places are notable for their high quality. Many Central Asian ceramic products of the Kushan period are first-rate examples of the potter's art.

Almost everywhere there were craftsmen producing metalware and adornments for women (bronze vessels, candlesticks, mirrors, bracelets, earrings, rings, etc.) and these were very finely made. Archaeological excavations have brought to light moulds of various shapes for casting metal objects.³¹

Judging from the large collection of objects found in the ancient burial grounds of Bukhara (Lavandak and Kuyumazar, Shuravul) and Hissar (Tupkhan), weapons were produced in large numbers. In Central Asia, during the first few centuries of our era, the commonest type of weapon was the large (up to 1.2 m long) double-edged iron sword, without a tang but with a long, rod-shaped hilt. Other types of weapons produced included daggers, spears, battle-axes, slings and bows-and-arrows. One weapon extensively used at this time was a special type of composite bow, pentagonal in shape, the parts fastened together with strips of bone or horn. In the Middle Ages, this type of bow was known in the East as the '*kamān-i Šāšī*' or '*Šāš bow*' (*Šāš* is the Persian form of the name *Čāč*) and was noted for the distance it could propel an arrow and for the accuracy attainable. The arrows were made of wood or reed, the heads being trihedral with a shank.

The ceramic or marble bobbins and pieces of cotton fabric that are frequently found at archaeological sites show that weaving was practised. The written sources tell us that between the *shahristan* and the citadel of Bukhara at the Guriyan gate there were large workshops producing cotton fabrics, shawls and curtains. From the jewellery of every

³¹ During the excavations at ancient Merv, traces of large-scale metal production were found.

imaginable kind discovered in many different provinces, it is clear that the jeweller's art was highly developed.

With the growth of handicraft activities and the expansion of trade, the extraction of minerals also increased considerably during the Kushan period. Metal ores, semi-precious and precious stones and other minerals were regularly mined. Mining developed rapidly, especially in the eastern regions of Central Asia. It is known from the written sources that iron, gold, silver and nephrite were mined in the mountains of Ferghana and Sogdiana, silver in Ilak, copper in Karamazar, rubies in Badakhshan and lapis lazuli in Bactria. Some mining products and metal wares were exported.

In the Kushan period, building attained a high technical level. Many towns such as Afrasiab, Kurgan-i Ramitan, Paikend (in the Zerafshan valley), Er-kurgan (in the Kashka Darya valley), Termez, Dalverzin-tepe, Zar-tepe, Khairabad-tepe (in the Surkhan Darya valley), Kanka (in the Tashkent oasis), Toprak-kala, Kunya Uaz, Ayaz-kala (in Choras-mia), Kukhna-kala and Kum-kala (in the Vakhsh valley) were enclosed by thick walls with rectangular towers. The towns and fortified settlements of the Kushan period were built according to a preconceived plan and had a very clear and systematic layout. Many were the administrative and political centres of the various Central Asian regions and provinces, and contained palaces, temples, workshops and dwelling houses. Public buildings were frequently of monumental size. Palaces and castles were built on high platforms and surrounded by strong fortifications. The massive walls of large chambers with high ceilings were decorated with murals and sculptures.

Central Asian fortification engineers were responsible for some major achievements in building techniques. The strong fortification walls reinforced by projecting towers, and the intricate labyrinths with multi-tiered loopholes, were some examples of major developments in the art of fortification at this time. Many different building materials were used. Fortification walls and monumental buildings were built of clay blocks and adobe bricks, which were usually square. Baked bricks were seldom used. In Bactria stone components (for example, base columns and capitals, the frieze from Ayrtam) were widely used for load-bearing structures and decoration. Ceilings were usually supported by pillars and beams. Where the span was relatively small, arched roofs were used. The largest Central Asian cities such as Bukhara, Samarkand, Ershi and many others became centres for both handicraft production and trade, and were frequently visited by merchants coming with their caravans from the countries of Western Asia, India and China.



FIG. 4. Tetradrachm of the Kushan 'Heraus'. (Courtesy of E. A. Davidovich.)

The coinage and monetary system

The political map of Central Asia in the Kushan period was complex. It is clear that northern Bactria and the regions along the Amu Darya as far as the middle reaches of the river formed part of the Kushan Empire. The other provinces of Central Asia constituted separate domains which, in the opinion of some historians, formed part of the Kushan state, while others have regarded them as entirely independent. It is probably nearer the truth to say that they were bound to the Kushan state by some kind of vassal relationship. It should be noted that most of these territories had their own coinage.

In northern Bactria (south Uzbekistan and south Tajikistan), the appearance of the specifically Kushan coinage was preceded by issues of coins (Fig. 4) that were copies of those minted by the Graeco-Bactrian kings Eucratides and Heliocles, the commonest being imitations of those minted by Heliocles; they were issued from about the end of the second century B.C. to the first half of the first century A.D. On the obverse was a bust of the king and on the reverse the figure of a deity with an inscription in Greek. In course of time the image of Heliocles was replaced by that of the local ruler and the Greek legend became increasingly corrupt. Although these coins were issued in silver, the imitations were struck in bronze. In size and weight they fell into four groups ranging from 12–15 to 37 mm in diameter and 2.2–2.3 to 26.5 g in weight.³²

³² Masson, 1956; Rtveldadze and Pidaev, 1981.

On the earliest specifically Kushan coins struck by the nameless king 'Soter Megas', the deity was replaced by a horseman and a Greek legend reading 'King of Kings, the Great Saviour'.³³

In the reign of Vima Kadphises, a new type was introduced to the coinage which remained in general use until the Kushan state stopped minting coins. The obverse showed the ruler standing before an altar, while the reverse bore the figure of some deity. The deities, however, were rarely of Greek origin; representations of the Indian god Śiva with the sacred bull Nandi are repeatedly used; and on coins of Kanishka and Huvishka, eastern Iranian gods and goddesses of fire, wind, sun, moon, etc., are common. Although there were many Buddhists in the Kushan Empire, the image of Buddha is very rarely found on coins. In general, the representations of deities on Kushan coins seem to reflect the diversity of religious beliefs throughout the vast territory of the Kushan Empire.³⁴ Some Early Kushan coins of Kujula and Vima Kadphises had inscriptions in Kharoṣṭhī, but once the regular series of Kushan coins was established, each coin bore a legend in Bactrian only, using the so-called Kushan script based on the Greek alphabet.

Most Early Kushan coins were of bronze. After the reform introduced by Kadphises II, the monetary system was based on gold staters, or dinars, which usually weighed about 8 g, but there were also double, half and quarter coins weighing 16, 4 and 2 g respectively, though these were more rare. This was practically the only example of a gold-based monetary system in the whole of Central Asia and the neighbouring countries, where in almost every period right up to the Late Middle Ages, monetary systems were based on silver. Gold coins, with their high purchasing power, were used for major transactions and especially for international trade, and it was to meet the requirements of international trade that the gold coins were first produced, copper coins being used for everyday transactions. They were issued in several denominations, but after the reform of Kadphises II the commonest coin in circulation was the large bronze 4 drachm (tetradrachm) that originally weighed about 16 or 17 g but subsequently smaller denominations were also struck (Fig. 5). Large numbers of bronze coins have been found in nearly every province of the Kushan Empire. In northern Bactria, for example, Kushan copper coins have been found at the sites of dozens of monuments, and there have been many finds of these coins even in small rural settlements.³⁵ It is clear that large sections of the rural population as well as towns people were involved in day-to-day commodity exchanges involving money.

³³ Masson, 1950.

³⁴ Zeimal, 1965, 1967.

³⁵ Rtveladze and Pidaev, 1981.



FIG. 5. Coins of Kanishka. (Courtesy of E. V. Zeimal.)

Unlike silver and gold coins, Kushan copper money did not generally circulate outside the territory of the Kushan state, and the area in which copper-coin finds have been recorded provides a clear indication of the line followed by the northern frontiers of the Kushan Empire. Copper coins have been found not only in south Tajikistan and south Uzbekistan, but also along the Amu Darya as far as Chorasmia. However, almost all the coins found in Chorasmia itself had been countermarked, and in the opinion of modern historians, this indicates that Chorasmia was not part of the Kushan state.³⁶

Chorasmia began minting its own coinage about the end of the second century B.C., and for a long time it minted only silver. The first issues were imitations of the Graeco-Bactrian tetradrachm coins of King Eucratides, but gradually Chorasmia developed its own types. The obverse bore a portrait of the king, and the reverse the image of a horseman, the Chorasmian tamgha and a Chorasmian legend (Fig. 6). The first copper coins were issued in Chorasmia at about the end of the first century A.D., but it was not until the end of the third century that they were minted in considerable numbers. The obverse portrayed a horseman or the bust of a horseman, and the reverse normally a monogram. Not all coins bore legends. While silver coins had been minted primarily for political purposes (proclamation pieces), the extensive issues of copper coins were a sign that major advances were being made in the economic sphere. The large number of finds in many rural settlements shows that ordinary day-to-day trading activity was already widespread. This last remark applies mainly to right-bank Chorasmia and not Chorasmia as a whole.³⁷

Of all the provinces of south Turkmenistan, the most highly developed from the economic standpoint was the province of Margiana. Parthian bronze and silver coins circulated there before the third century A.D. On both, the obverse showed a bust of the king, and the

³⁶ Masson, 1975; Vaynberg, 1977; Zeimal, 1978.

³⁷ Vaynberg, 1977.



FIG. 6. Chorasmanian coins. (Courtesy of V. M. Masson.)

reverse a royal archer seated (Fig. 7). Early Parthian coins bore inscriptions in Greek which in time became more and more corrupt, and from the first century A.D. local inscriptions in Pahlavi began to appear. Although Margiana may have had its own silver coinage, the fact that it issued its own bronze coins, which have been found in large numbers not only in the ruins of cities but in many rural settlements, is of much greater importance. In the development of day-to-day small-scale trading and commodity-money relationships, Margiana closely resembled Bactria.³⁸

In Parthia, another province of south Turkmenistan, the situation regarding the circulation of money was quite different. Although excavations at Nisa have brought to light not only Arsacid silver, but also Graeco-Bactrian, Seleucid Pontic and other silver coins, Parthia had no copper coinage of its own. This would seem to indicate that Parthia was less advanced than Margiana in the matter of trading and economic development in general.³⁹

In the Zerafshan valley, several domains issued their own coins. In the first or second century A.D., Samarkand in Sogdiana began producing silver coins with the bust of the king on the obverse and the image of an archer on the reverse. Originally these coins bore legends in both Sogdian and Greek, but those in Greek gradually became corrupt and were eventually replaced entirely by legends in local Sogdian. At the same time the weight of the denomination was progressively reduced from 4 to 1 g.

³⁸ Masson, 1957b

³⁹ Masson, 1955.



FIG. 7. Coins of Sanabares. (Courtesy of V. M. Masson.)

In the Bukhara oasis, silver coins were issued from the second century A.D. They were modelled on the tetradrachm piece of the Graeco-Bactrian king Euthydemus and bore his profile on the obverse and a seated Zeus on the reverse. As was the case elsewhere, the Greek legends became increasingly corrupt and were finally replaced by legends in Sogdian. They did not suffer any significant reduction in weight but the purity of their silver was considerably debased.

The so-called coins of Hyrcodes were probably minted in the north-western parts of the Bukhara oasis. The obverse bore a bust of the ruler and on the reverse was the figure of a horse or a standing deity. On these coins, too, the legends were changed, the weight reduced and the purity of the metal debased.⁴⁰

There is no evidence of the minting of coins in the Kashka Darya valley during the Kushan period. The earliest issues of so-called 'Nakhshab' copper coins were minted in the Karshi oasis, probably in the fourth century A.D.⁴¹

According to all the available evidence, Chach was the only province in the Syr Darya region that minted its own coins, the so-called ancient Chach copper coins with the head of the ruler on the obverse and a seal with a Sogdian legend on the reverse. This group of coins, which dates from somewhere between the second and fourth centuries A.D.,⁴² has not yet been adequately studied. However, ancient Chach coins – and even hoards of them

⁴⁰ Zeimal, 1978.

⁴¹ Kabanov, 1973.

⁴² Masson, 1953; Masson, 1966.

– have been found at many early sites, showing a well-developed relationship between commodities and money.⁴³

In Central Asia, in the Kushan period generally, the minting and circulation of money increased greatly, and in a number of provinces, local coins – local with respect to their iconography and legends – came to replace the imitations of Hellenistic coins. At the same time, the economic development of the different provinces of Central Asia was very uneven. An analysis of the numismatic material indicates that northern Bactria and Margiana were the most advanced provinces, while Chorasmia, the Zerafshan valley and Chach were somewhat less advanced. Finally, there were some provinces, such as Ferghana, that did not have their own coinage and where commodity-money relations were still in their infancy. In general, however, it may be said that during the Kushan period there was a developed monetary system with coins of various denominations minted in large numbers. Copper coins accounted for the greater part of the Kushan issues, as these were evidently necessary for everyday buying-and-selling transactions.

Trade and commerce

Both internal and external trade and commerce flourished in the Kushan period. The development of trade and the strengthening of economic ties resulted, above all, from the consolidation of the supremacy of the Kushan Empire, the expansion of agriculture and the growth of handicraft production. As is clear from the mass of archaeological material from various ancient sites of the period, trade between the Central Asian provinces increased greatly. Items of trade included products of handicrafts and agriculture, and both consumer goods and luxury articles. Consumer goods such as cereals, fruit, textiles, pottery, timber, etc. probably formed items of regular and extensive trade within the country, which demanded the minting of local coinages in different regions – Chorasmia, Margiana, Samarkand, Bukhara and Chach – serving as a medium of exchange in retail transactions.

The agricultural regions of Central Asia were at this time conducting a particularly vigorous trade with livestock-breeders of the nomadic steppe zone. They were linked by a trade route that ran along the Syr Darya. This caravan route, which linked the northern regions of Ferghana and ancient Chach with the regions of the lower and middle Syr Darya and the Aral Sea area, served as a kind of two-way transmission line for the agricultural areas.⁴⁴ Cereals, fruit, handicraft products and weapons were transported along this route to the nomads of the north; in exchange, furs and skins, meat and milk products, livestock

⁴³ As a result of extensive archaeological research in recent years, 1,000 coins minted in Chach in various denominations have now been found. Previously only a few specimens were available.

⁴⁴ Litvinsky, 1972.

and raw materials for weaving were accepted in the south by the sedentary peoples. It is not surprising, therefore, that this period witnessed the growth of major cities in the Syr Darya basin, ruins of which have been found at Akhsikent,⁴⁵ Kanka and Shahrukhiya,⁴⁶ Otrar⁴⁷ and Dzhetî-Asar.⁴⁸ Foreign trade also expanded considerably in this period. The main trans-Asian trade routes passing through Central Asia linked the Mediterranean countries with India and the Far East. Substantial overland trade was conducted with India. The most convenient route from India passed through the cities of Taxila and Peshawar, and along the Kabul river valley into Bactria. From there merchants travelled by boat down the Amu Darya, over the Caspian Sea and across Transcaucasia to the Black Sea. They also made their way to southern Siberia. The Silk Route from China to the Mediterranean countries had a branch linking Bactria to Barygaza (Broach), which had established regular maritime links with the countries of Western Asia. This branch acquired greater importance when contact between Bactria and the West was suspended because of international politics. In about 127 B.C. Chang Ch'ien discovered in Bactria some bamboo articles and textile goods which had come from Szü-chuan via India.

The main exports from India were spices (pepper, ginger, saffron, betel), perfumes and medicines (sandalwood oil, spikenard, musk, cinnamon, aloe, bdellium), lacquers and dyes (indigo, cinnabar), silk, rice, sugar, vegetable oils (sesame, coconut oils), cotton, precious woods (teak, sandalwood, ebony), pearls, precious and semi-precious stones (diamonds, sapphires, rubies, jasper, etc.), ivory, exotic animals and slaves.⁴⁹

At the same time, India imported precious metals (gold, silver) and non-ferrous metals (copper, tin, lead, antimony), horses, purple dye, coral, wine, slaves and artistic pottery and glassware. According to a report by Pliny the Elder (XII, 8) dating from the second half of the first century A.D., the value of imports into India, East Turkestan and Arabia totalled 100 million sesterces. Some of these imports undoubtedly came from the Central Asian provinces of the Kushan Empire. Moreover, there is evidence of Bactrian merchants travelling to the confines of the Roman Empire, particularly to Alexandria in Egypt, one of the leading commercial centres, and of Roman merchants visiting Central Asia, where a fairly large number of Roman objects and swords have been found,⁵⁰ testifying to the existence of trade links between the Roman Empire and Central Asia.

⁴⁵ Bernshtam, 1952.

⁴⁶ Buryakov, 1975.

⁴⁷ Akishev et al., 1972.

⁴⁸ Levina, 1971.

⁴⁹ Pigulevskaya, 1951.

⁵⁰ Staviskiy, 1964; Masson, 1966.

Intensive trade was also conducted during this period with Han China, which exported silk, nephrite, lacquerware, hides, iron and nickel. Central Asian merchants exported glass, precious stones and ornaments to China. Luxury goods were the main articles of trade, as was usually the case in ancient times. The Sogdians played an important role in the development of trade links with China. In Tun-huang (East Turkestan), letters in the Sogdian language have been found, dating back to the early fourth century A.D. (or to the end of the second century A.D.). One of them notes that 100 freemen from Samarkand were living in Tun-huang. W. B. Henning estimates that the number of Sogdians (including slaves and their families) in Tun-huang must have totalled 1,000. Several letters contain information on merchandise, trade, prices, etc. The Sogdians living in East Turkestan maintained close contact with their home town in Samarkand.⁵¹

During the period under consideration, the rulers of different countries and provinces played an active role in international trade and enjoyed a monopoly of trade in certain goods. They used to dispatch their ambassadors with large quantities of merchandise and valuable gifts, and formed their own trading guilds. For example, in Book 2 of the *Mahābhārata* (second to fourth century A.D.), there is a reference to gifts brought to Yudhiṣṭhira, the King of the Kurus, at Indraprastha (the site of modern Delhi) by emissaries of various peoples, among them Central Asians. From Vahlīka (Bactria) came 'woollen blankets, of good proportions, beautifully dyed, pleasant to the touch', various fabrics, sheepskins, weapons and precious stones, and the Sakas and Tocharians used to bring horses 'capable of covering long distances' (*Mahābhārata* II.47).

The Silk Route

A major role in the development of international trade during the Kushan period was played by the Silk Route, the main trans-Asian caravan route, which, from the second century B.C. onwards, linked China, India and Central Asia with the countries of the Mediterranean. It owed its name to the fact that the principal commodity carried was Chinese silk. The Silk Route began at Ch'ang-an, the capital of China at that time, and ran westward along the edge of the Gobi Desert, passing through Lan-chou to Tun-huang. At Tun-huang, it divided into two, one branch going south and the other north. The northern route followed a straight line from Tun-huang to Turfan, crossing the sand-dunes of the White Dragon salt desert, which at one time had been part of the Lop Nor lake bed. That was the most difficult stretch of the Silk Route, and the trade caravan guides – usually Sogdians or Bactrians – preferred to bypass the sand-dunes of the White Dragon and make a large detour to the north on

⁵¹ Henning, 1948.

the way to Turfan. From Turfan the Silk Route went through Ch'iu-tzŭ into Aksu, then from Kashgar to Ferghana via Samarkand, and on to Antioch in Margiana. The southern route from Tun-huang went via Khotan and Yarkand to the capital of Bactria, and then to Zariaspa and Antioch in Margiana, where the two roads joined. From Margiana the Silk Route ran west to Hecatompylos, the ancient capital of Parthia, and thence to Media, Ecbatana and Mesopotamia, and across the Euphrates to the ancient ports on the eastern coast of the Mediterranean (see also Chapters 16 and 19).

There was a constant struggle between the Chinese and the Central Asians, and between the Parthians and the Romans, to establish control over the Silk Route and so dominate international trade. As early as the first century B.C., Han China took control of the eastern section and launched a military campaign against Ferghana. From that time onwards, China had direct trade relations with Bactria. According to Szŭ-ma Ch'ien, from the years 115–114 B.C. onwards, more than ten missions a year were sent from Ferghana to the West. Caravans made their way unimpeded to Bactria, India and Sogdiana, reached Parthia and penetrated even further west. The seizure of the Silk Route, which made it possible to maintain regular and direct contacts between Han China and the states of Central Asia and the West, laid the foundations for cultural and trade exchanges. From Central Asia, China received grapes, lucerne, beans, pomegranates, saffron and nut trees; the acquisition from Ferghana of the war-horses needed for the new Chinese cavalry was of particular importance.

Parthian merchants tried to prevent the establishment of direct trade links between the Roman Empire and China. Merchants from the Kushan Empire also competed with the Parthians and tried to become major intermediaries. The basic means of transport in this international caravan trade was the camel. The accounts of travellers suggest that some of the most difficult stretches of the Silk Route were passable only because of the superior qualities of the Bactrian two-humped camel.

Social structure

Very little is known of the social structure and types of land-ownership in Central Asia under the Kushans. The Kushan Empire was one of the great powers of the period. It comprised a large number of countries with different social structures. It included fertile agricultural oases with many commercial and handicrafts centres and rural settlements as well as vast steppelands and mountain regions. In the towns, slave-owning systems existed, while in agricultural regions freemen in communes preserved in their way of life many aspects of tribal–clan relations. Such relations were particularly common among the

livestock-breeders who lived in the steppe and foothill regions of Central Asia. Before the establishment of their empire, the Kushans had been a relatively small nomadic tribe and long preserved many of their own traditions even after they had settled in Bactria, but once they had become rulers of a huge empire, their patterns of social organization changed considerably. Detailed analysis of archaeological material (especially the types of settlements and material remains) shows that in the Kushan period there was considerable variety in social status and property ownership, patterns which subsequently spread to virtually the whole of the territory of Central Asia. On the local coins minted in Central Asia and in the 'Ancient Letters' and other Sogdian written documents, a wide range of terms is used to denote different social groups in the Kushan period and the era immediately preceding it.

There is some direct, and a great deal of indirect, evidence to show that the commune occupied an important place in the socio-economic life of Central Asia and in the ancient East as a whole.⁵² This seems to have continued until the Early Middle Ages, for which evidence is available. Thus, the commune in Sogdiana was known as *nāf*; it consisted of the aristocracy (*āzāt*, *āzātkār*), merchants (*xvākar*), and free peasants (who were members of the commune) and craftsmen (*kārikār*).⁵³ Of these three categories in the *nāf* the highest status was enjoyed by the *āzāt* that is, persons of 'high and noble birth', the *āzātkār* or free persons associated with the *āzāt* and the 'children of the *āzāt* of aristocratic, noble origin'.⁵⁴ According to the written sources, the *āzāt* owned the land and the villages and were the chief retainers of the local and provincial rulers.

Next came the *xvākar* or merchants, who constituted one of the propertied classes. The third category consisted of the *kārikār* who paid a poll-tax and were not regarded as noblemen. At that time there were certainly slaves and a dependent, subject population. The Sogdian 'Ancient Letters' contain terms such as '*bandak*' (slave) and '*daya*' (bondswoman). A fairly complete picture of the composition of ancient Chorasmian classes and their use of slave labour in the economy is provided by documents from the Toprak-kala palace archives. These give the names of the heads of 'family households' and of 'house-owners', their sons, sons-in-law and slaves. The roll of the 'House of Gavšimava' (Document No. 8) listed a total of twenty-one males: the house-owner, his two sons, his son-in-law and seventeen slaves – including twelve slaves serving the house-owner, his sons and son-in-law, two in the service of their wives, two to look after the young grandchildren and one to look after the concubine of the master of the house. The 'House of Vavanšira' (Document No. 7) had seventeen males: the master of the house, his son-in-law and fifteen slaves, including

⁵² D'yakonov, 1967.

⁵³ Smirnova, 1970.

⁵⁴ Henning, 1948.

twelve attached to the master of the house himself. The families described in these documents were very prosperous, as is clear from the large number of slaves in proportion to the number of free adult males.⁵⁵

In spite of the very considerable number of slaves, slavery was not the only, and probably not the predominant, form of labour. Little use was made of slaves either in agriculture or in handicraft work, as their labour was not profitable.⁵⁶

Land-ownership

Unfortunately, historians do not yet have at their disposal concrete material on many of the most important aspects of the social and economic history of Central Asia during the Kushan period. There is virtually no information from Central Asia proper on the different categories of land-ownership.

There is, however, some direct, and a great deal of indirect, evidence that suggests that there were several different categories. The documents from the archives of Old Nisa, which provide some insight into the economy of southern Turkmenistan during the first century B.C., are particularly valuable. There was one category known as *uzbar* land. The *uzbar* or levy, was already known in the Achaemenid period as revenue directly received from royal land. A number of estates consisting partly of vineyards belonged to this category. These estates – about a score of them are known – were largely *dastkirt* or royal estates. The same estate might also contain *patbāzik* land. In Achaemenid times the term ‘*patbāzik*’ meant the delivery to the king of a contribution in kind, consisting of fruit and types of produce.⁵⁷ It is highly probable that a certain proportion of irrigated lands in the Central Asian oases belonged to temples. A special priestly class, who is attested in the area long before the Kushans, also probably possessed land during this period. The medieval name ‘*vagnze*’ was quite common in Central Asia; it was linked with the Sogdian term ‘*ḡayan*’ (temple) and probably meant land belonging to temples or shrines. Besides the royal and temple lands, there were private and communal lands. In all probability, there was more land under communal ownership than any other type. There is some evidence to show that communes owned whole irrigation systems and the regions irrigated by them, as well as settlements and grazing lands. Localities settled by rural communes were called *varzana*, *vardana* or *gava*, meaning village or rural district, and it was precisely at this time that the fortified settlement of Vardanze, in the northern part of the Bukhara oasis, was established. Unfortunately, there is almost no specific material on communal

⁵⁵ Gudkova and Livshits, 1967.

⁵⁶ Gafurov, 1972.

⁵⁷ D’yakonov and Livshits, 1960a.

land-ownership; but it seems probable that the commune during this period was intensively exploited by the state and large land-holders, who tried to attach members of the commune to the land – a process that ultimately led to the emergence of feudalism in Central Asia.