

THE MEDIEVAL URBANIZATION OF NORTHERN CENTRAL ASIA AND THE INTERNATIONAL MONETARY SYSTEM

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1 – The urbanization of Northern Central Asia

During the Early Middle Ages the Middle-Low Syrdarya (6 regions: Chach, Arys, Otrar, Turkestan, Syrdarya left bank, Syrdarya delta) and Northern Tianshan (4 regions: Talas, Chu, Semirechie, NE-Tianshan) have been the theatre of a magnificent integrated urban process, counting a total of 1334 fortified towns covering all together an area of 5000 ha (Fig 1). Half of it developed on the Syrdarya and half on the N-Tianshan piedmonts, but with different periodization (Figs 2, 3, 4).

The Syrdarya urban complex starts as early as the VI BC and blossoms between the I and VIII AD, with a last building peak under Karakhanid rule (X AD). Until the V AD its development is based on irrigated agriculture, and then is accompanied by metallurgy and international trade.

The N-Tianshan urban complex practically starts during the V-VI AD in Talas, capital of the empire of the western Turks, and blossoms all along the northern piedmonts between the VIII and XI AD, somehow immediately successive to the Syrdarya peak development. Turkic tribes are skillful metallurgists, and the urban development in N-Tianshan is from the very beginning coinciding with the mining, working and trade of polymetal ore.

The XII AD already sees everywhere stasis or small contraction of the process of urbanization. The Mongol invasion of the XIII AD disrupted the NW-Tianshan and Chach complexes, but barely affected the other oases of the Syrdarya. (Figs 5.1-5.8)

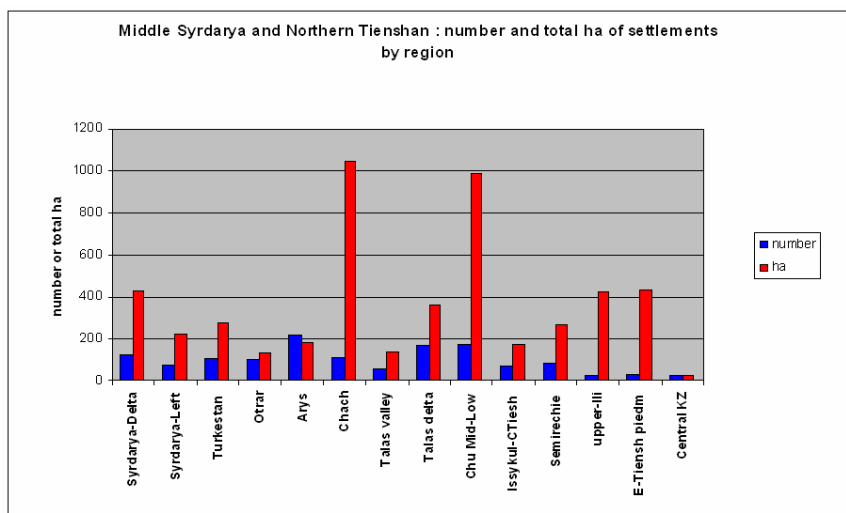


Fig. 1 - Syrdarya-NTianshan: number and total of settlements ha per region

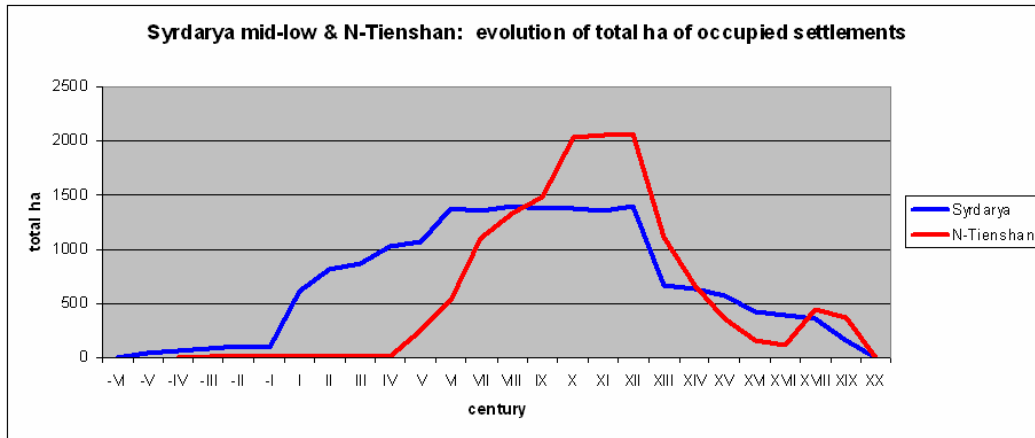


Fig. 2 - Syrdarya-N-Tienshan: evolution of total ha of occupied settlements between VI BC and XX AD

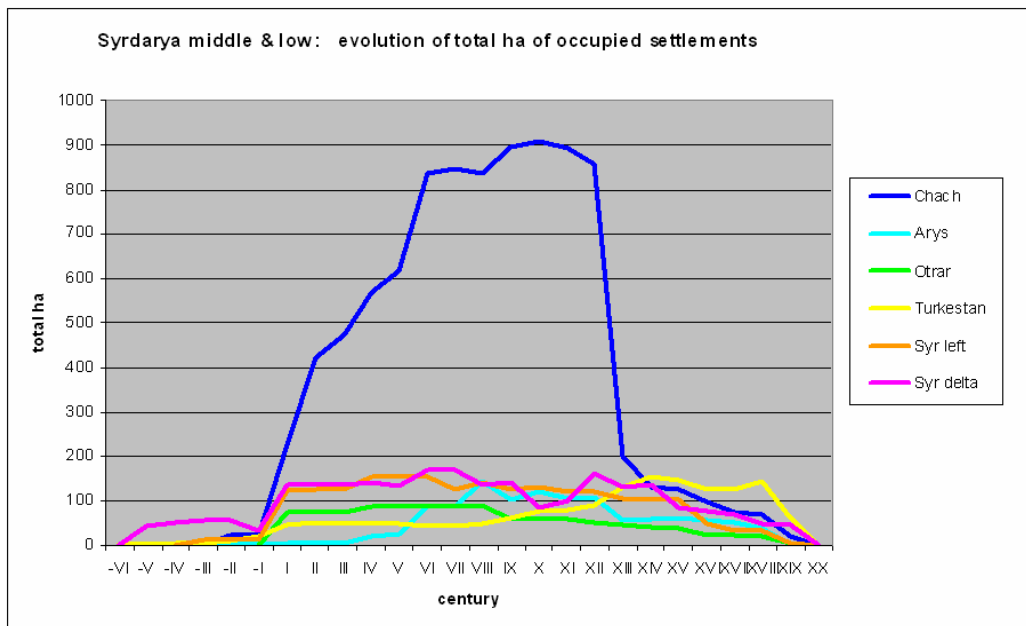


Fig. 3 - Syrdarya: evolution of total ha of occupied settlements per region between VI BC and XX AD

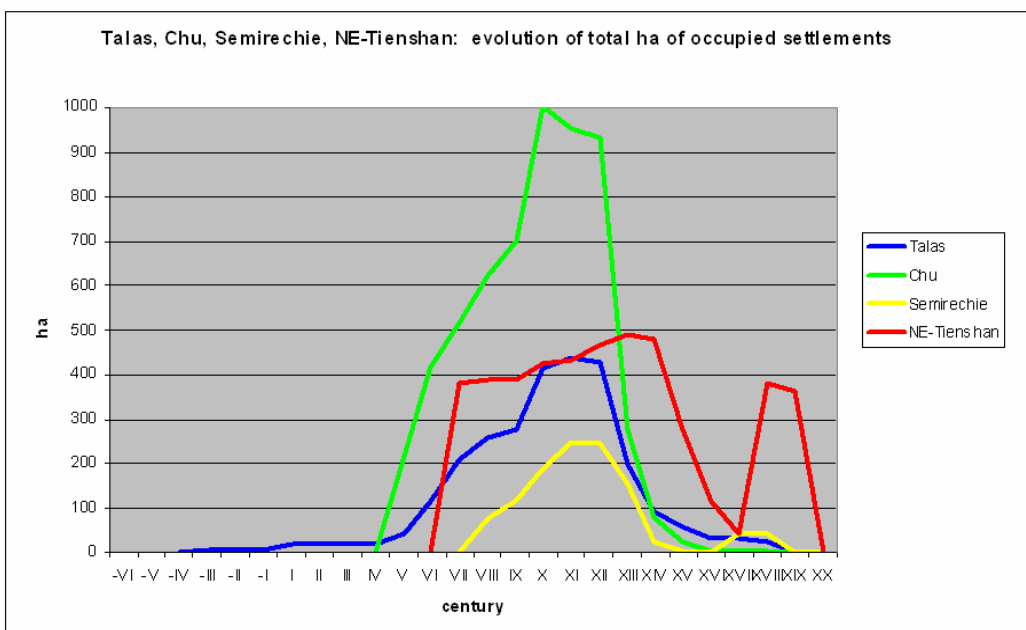
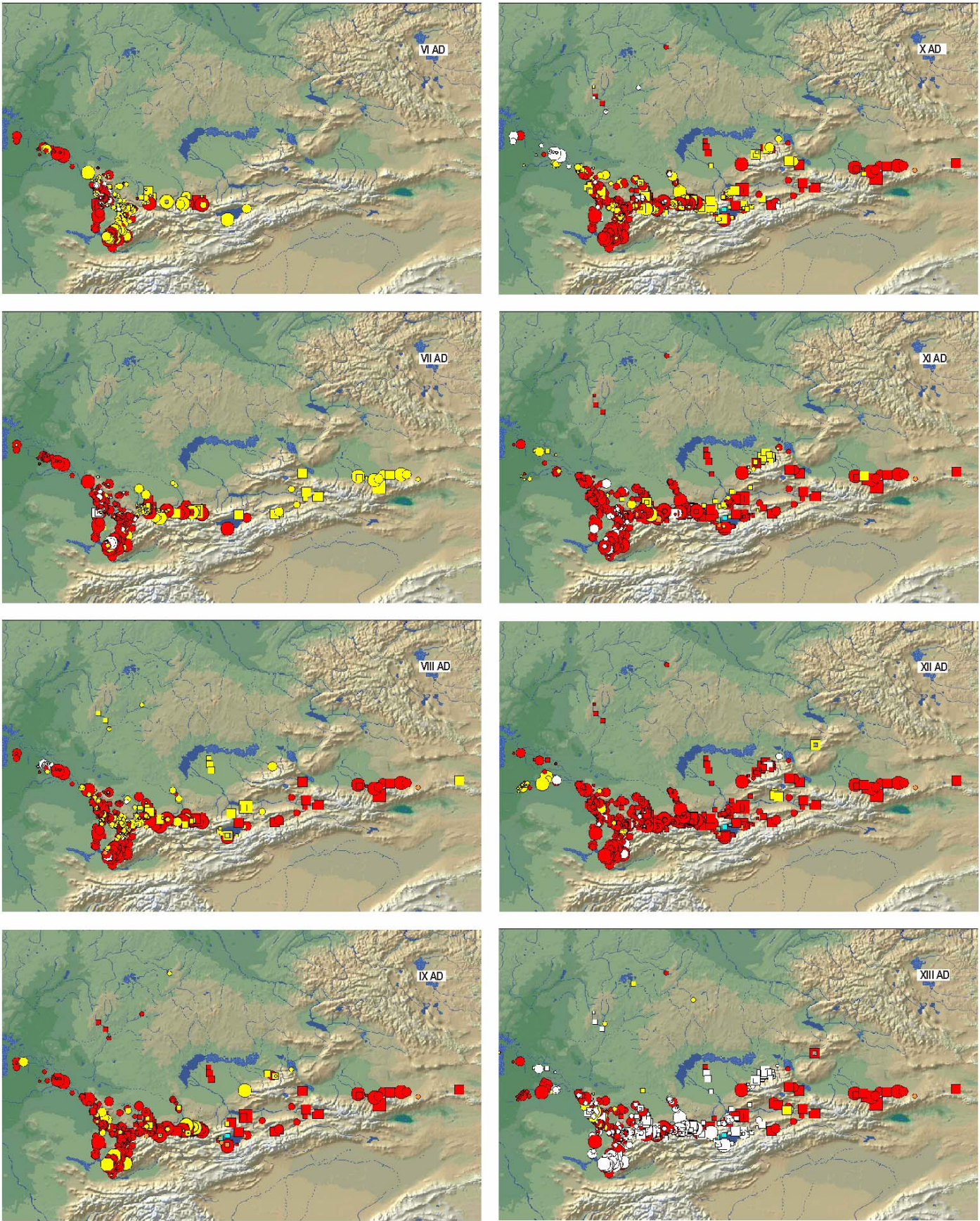


Fig. 4 - N-Tienshan: evolution of total ha of occupied settlements per region between VI BC and XX AD



Figs 5.1-5.8 - Syrdarya-N-Tienshan: century by century maps of occupied settlements from VI to XIII AD (yellow = structures newly built; red = structures still occupied; white = structures just abandoned)

2 – Eurasian monopoly of silver production in Western Central Asia (560-1120 AD): 4 phases of peak extraction and intermediate silver crises

A large urban complex presupposes division of work, complex interactions, and a general mean of exchange (i.e. money in gold, silver and copper, respectively for large, medium and small size transactions). In fact money allows the independence of buying and selling and so the acceleration and widening of the market activities. Lack of stable currency always provoked deeper economical crises than wars.

The Medieval urban complex of Central Asia was huge and was of course supported by a sound monetary basis and financial politics. He had coins, minting towns and, most important, the richest silver mines of Eurasia. Here, between the VI and XI AD, silver mines played the same international role played by copper mines during the II millennium BC. From the VI to the XI AD the exploitation of silver deposits made of Central Asia the core of the international monetary system, favoring at first the peak of the existing urban systems of the Middle Syrdarya, and then the start and peak of the urbanization of N-Tianshan.

Silver deposits provided metal for minting local Central Asian silver coins, for paying tribute to the Abbasids and then to the Samanids, with the abundant rest marketed to silver-hungry countries in the form of silver objects¹ (arm-rings, ingots and fragments of ornaments) or kufic coins. The countries of destinations were: the Islamic civilization, which represented the richest economical system of the time; India and China, rich in gold but poor in silver; and then Europe, totally depleted of metal currency and economically depressed.

The Medieval average gold/silver rate was 1/5 in China, 1/14 in Central Asia and Persia, 1/12 in Europe. After 1820, with the introduction of the gold standard, it decreases to 1/30 and today is at 1/50.

2.1 – Silver mining: four phases

The main regions of Medieval silver mining have been Chach (Ilak, Chatkal, where 15 and 30 mining sites are respectively documented) (Buryakov 1965) and the Talas valley (where 79 mining sites are documented) (Bubnova 1963) (Fig 6). Here are also located most of the metallurgic centers (13 in Chach and 10 in Talas) and a large proportion of minting towns (9 out of the total 19 of the Mid-Syrdarya and N-Tianshan).

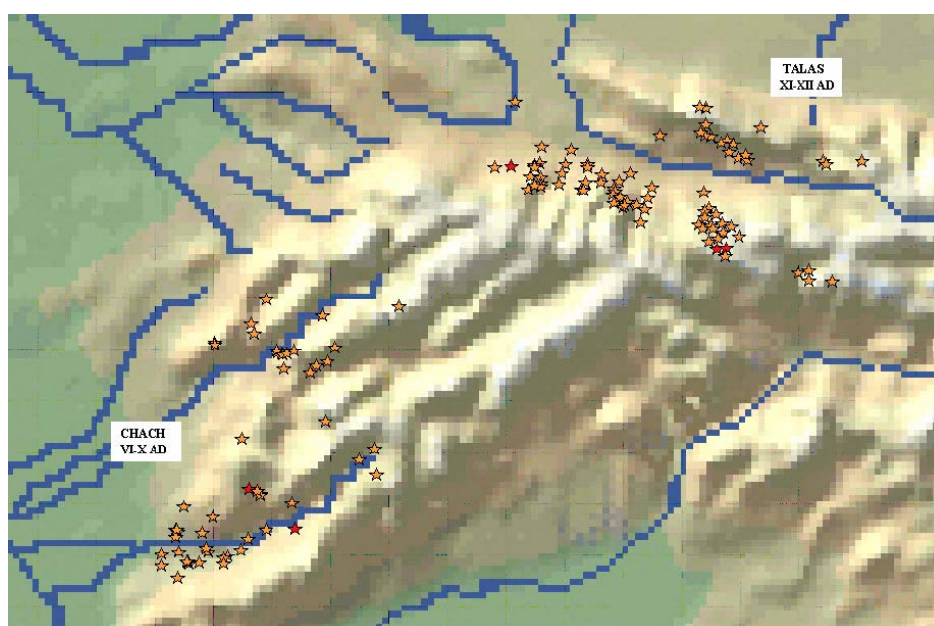


Fig. 6 - Map of medieval mines of Chach (I-X AD) and Talas (XI-XII AD)

¹ Most common were ingots and bars, arm-rings, fragments of ornaments.

Silver is extracted together with gold and base metals (Cu, Pb, Zn, Fe). The main chronological phases of extraction are 4: the first 3 have Chach as main center, the fourth is centered in Talas (Blanchard 2001).

560-670 AD: Chach and Panjir (NW Afghanistan) are producing most of the Eurasian silver, just few tons per year in the VI AD but up to 15 during the VII AD.

710-780 AD: the Panjir mines are exhausted and Chach alone produces around 25 tons of silver per year. The total metal output averaged a 53% of silver, a 25% of gold and the remaining 25% of base metals (Buryakov 1965).

850-960 AD: the Chach production is paralleled by the one of the Pamirs, and together they provide around 23 tons a year. Few silver mines are already active in Talas ² and a couple in Semirechie (Tekely, Muzbulak) ³.

1020-1120 AD: the Chach and Pamirs mines are depleted, and the Talas mines develop up to a production of 23-40 tons per year. The work is done by local and foreign agencies (10000 people from Isfahan are based around Sheldji) and the output, mainly sold to the Ghaznavids, is channeled to India.

After the XII AD, with the exhaustion of the local mines ⁴, the silver business abandons Central Asia (a fact that is surely contributing to the huge urban regression that follows) and switches to Europe where new technologies are introduced and new mines discovered ⁵, allowing a yearly production of more than 20 tons. From that time until the exploitation of the American mines (1550 AD), silver will travel from Europe to the East and gold from China and India to the West ⁶. So, after the XII AD, Central Asia finds itself out of the big game: it manifests internationally its existence a couple of centuries longer through military superiority and booty (Mongols, Timurids), and finally disappears from the international economical and political scenario.

2.2 – International circulation of Central Asian silver and coins

In post-Roman Europe mining and currency are scarce, and commercial activities, just done by aristocratic elites, are chronically low. Starting from the V AD the currency is searched through trade with Middle East and Central Asia. Imports are precious metals and coins, exports are furs and slaves⁷. During the VIII-X AD in Central Asia special coins (Kufic drachma of 2.9 grams and 90%

² The Muslim geographer al-Makdisi in 995 describes Taraz as “a large fortified town with many inhabitants and parks, four gates and a crowded rabat”; and the main metallurgic towns of Jeldy (Sadyrkurgan), Sus (Chadivar) and Takabket (Aktobe-Talaskoe) in the Talas valley as “located near a mountain with silver ore deposits”.

³ Rich silver mines are also discovered in 892 in Benjahir (Afghanistan) and are shortly exploited by the Saffarids (Eastern Iran dynasty) and then by the Samanids.

⁴ The Franciscan traveler Rubrouck, entering in November 1253 the Talas delta from the Karatau northern piedmonts, speaks about the presence of precious German slaves formerly working as metallurgists in the Talas valley and then displaced to the Borotala valley.

⁵ Particularly important has been the silver extraction from the mineral deposits of Saxony: in 968 AD are put in use the Rammelsberg mines, and in 1200 the Freiberg mines. In 1292 starts the exploitation by private enterprise of the rich silver mines of Devon (South England).

⁶ By the start of the XI AD, in the composition of the Northern Russian hoards, kufic material is substituted by Friesian export of German material (Korpela 2008).

⁷ At the large market of Bulghar, on the middle Volga near the present town of Kazan, silver, spices, silk and gems were exchanged against furs, slaves, sheep, cattle, goatskins and leather, hawks, honey, wax, nuts, coriander seeds, grapes and dried figs, maple wood (for bowls), corn, amber, brocade, lengths of cloth, thread, caps, fish-glue and fish-teeth (which might mean walrus ivory), mailcoats and special arrows. Archeologists, excavating Bulgar sites, have unearthed numerous arrowheads of both iron and bone, specially designed with blunted points for shooting animals

of silver content) are minted just for export and so are massive silver objects of average artistic quality (Davidovich, Dani 1998).

Trade mainly happened by steps across a sequence of large market towns along two waterways, a western and an eastern one, both reaching Central Europe and Scandinavia. The western road was running from the Caliphate territories across the Mediterranean to and round Spain, with a derivative land road along Italy and Central Europe. The eastern road ran directly from Central Asia (Caspian)⁸ and the Black sea along the rivers crossing the territory of the Khazars, Bulgars (known as the Silver Bulgars), Russians and Finno-Ugrians (Bernstein 2008), making of the whole area an integrated market and political zone⁹. In silver trade it was probably the most active, being that the oldest kufic coin in Europe had been unearthed in Great Nevo Lake (Ladoga), hundred of thousands of them have been unearthed in Northern Russia and the Baltic, and Viking Scandinavia (IX-XI AD) holds the 50% of all the European hoards of the time, evidently hidden in periods of unrest (pirates and raiders) and never recovered until modern times (Hoven 1982)¹⁰. (Fig. 07)



Fig. 7 - Medieval trade routes between the Ponto-Caspian region and the Baltic (VII-XI AD)

In Europe the main phases of import of precious metals coincide with the first 3 mining phases of Central Asia: 560-670, 710-820, 850-960 (Blanchard 2001), being that the output of the fourth mining phase (Talas 1020-1120) was mainly channeled to India.

The intervals between the 4 mining phases of Central Asia (670-710, 780-850, 960-1020) coincide with silver crises, not so much in Central Asia itself where anyway in 820 AD silver coins are for a short time debased to the 14% of silver content (Davidovich, Dani 1998), but surely in the surrounding civilizations, and particularly in Europe. In Europe the occasional exploitation of English and German silver mines are well correlated with these interval crises: 640-750, 810-850, 960-1070 (Blanchard 2001).

without damaging their valuable pelts. In the Eurasian medieval trade two languages were customarily used as *linguae francae*, one Iranian and one Altaic (at first Hunno-Bulgarian, then Middle Turkic), but ‘silent exchange’ by exposition of goods was the main mean. Merchants engaged in foreign trade (called *gosti*, i.e. strangers) were wearing swords and gathering (on the sea, on land, in caravanserais and markets) in large solidarity groups.

⁸ The caravan route leading from Urgench to the Volga was crossing a very harsh desert but was facilitated by the construction of a series of caravanserais made of cut stone and of wells lined with stone. The main towns of the Volga and Don route were Atil, Sarkel, Bulghar, Ladoga; of the Dnieper route Kiev and Novgorod. They were all hosting garrisons employing Oguz and Pecheneg mercenaries.

⁹ The control of the activity of the eastern road during the VII-X AD switched from the Khazars of the Volga delta to the Bulgars of the middle Volga and finally to the Rus-Varangians (Vikings) of the Pre-Baltic region.

¹⁰ Half of the 136 coins found in the treasure of Fittja (Upland, Central Sweden) are issued by the rebel ruling houses of the Tahirids of Khorasan (820-867) from the mints of Bukhara, Merv, Samarkand and Chach (www.uu.se/~wwwunc/edu).

By 1015 the importation into Europe of Central Asian silver had ceased completely, and the eastern link was broken¹¹. A huge international shortage of silver characterizes the centuries after the X AD, which may reflect a steadily increasing demand for coinage, as well as a real shortage of silver. Copper coins are reintroduced everywhere.

3 – Chach and Talas: mines, mints and the urban park

The periodization of mining in NW Central Asia is strictly coincident with the general peak of urbanization of the Middle Syrdarya and Northern Tienshan of the VI-XI centuries, and with the very start and end of the urban complex of NW-Tienshan. In particular, the effects of the Central Asian mining activities are evident in the evolution of the urban park of Chach during the IV-VIII AD and of the Talas valley during the VIII-XI AD.

In Chach the main building phases are three: the IV, mainly the VI and, slightly and finally, the X century AD. Of the new constructions, the 15-20% consists of metallurgic centers built at the periphery of the mining areas (a total of 13 units) or of large minting towns (a total of 8 units). The urban blossoming of the IV-VII AD is clearly connected with the first and second phase of silver extraction. The first urban contraction happens in the IX AD, together with the diminution of the mining activity, and is followed in XI AD by a second one including 1 mint and 2 large metallurgic centers. (Buryakov 1965) (Fig 8, 9, 10)

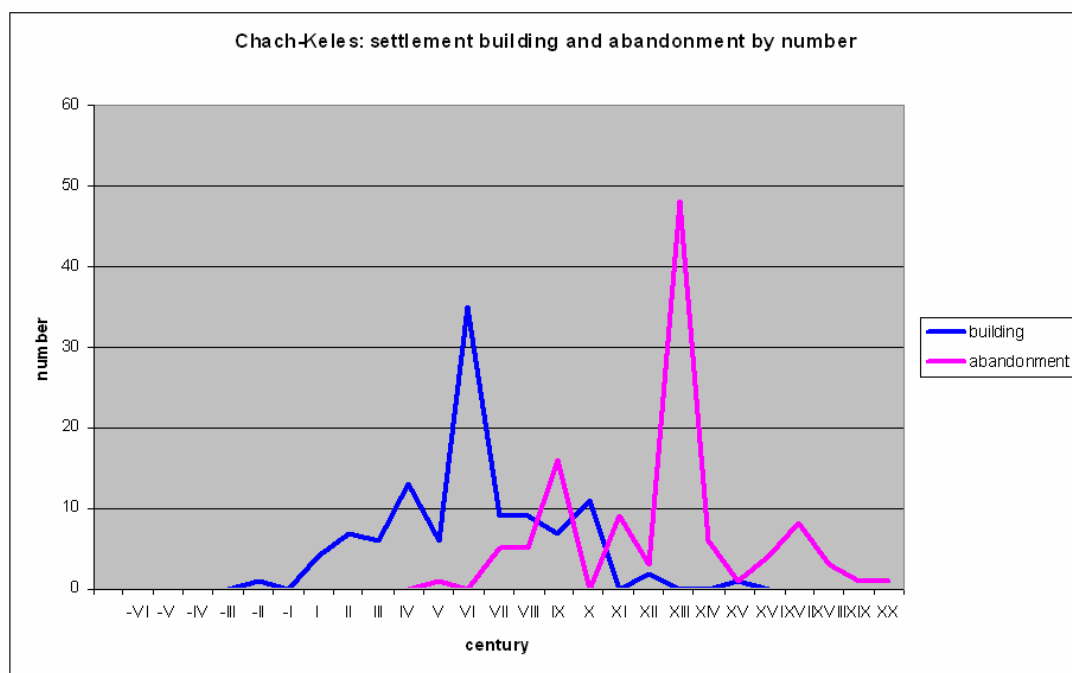


Fig. 8 - Chach-Keles: evolution of settlement building and abandonment by number between VI BC-XX AD

¹¹ “Around 965-70, the stream of Kufic silver coins from Bulghar (on the middle Volga, near the modern town of Kazan) dried up, and the market of Birka (Central Sweden) ceased to flourish. The silver mines in Asia had begun to fail, and the latest date on coins found in Russia is 1015. Alternative sources for silver for Scandinavians were Germany and England, and by the 10th century Byzantine coins also appear, although never in the same quantities as the Kufic ones of the earlier period.” (wwwunc.edu). With the closing of the Volga route and of the western export of Central Asian silver, several rich towns along the eastern road (Atil, Bulghar, Gorodishe, Timerevo, etc) and on the Baltic (Birka) decayed or vanished.

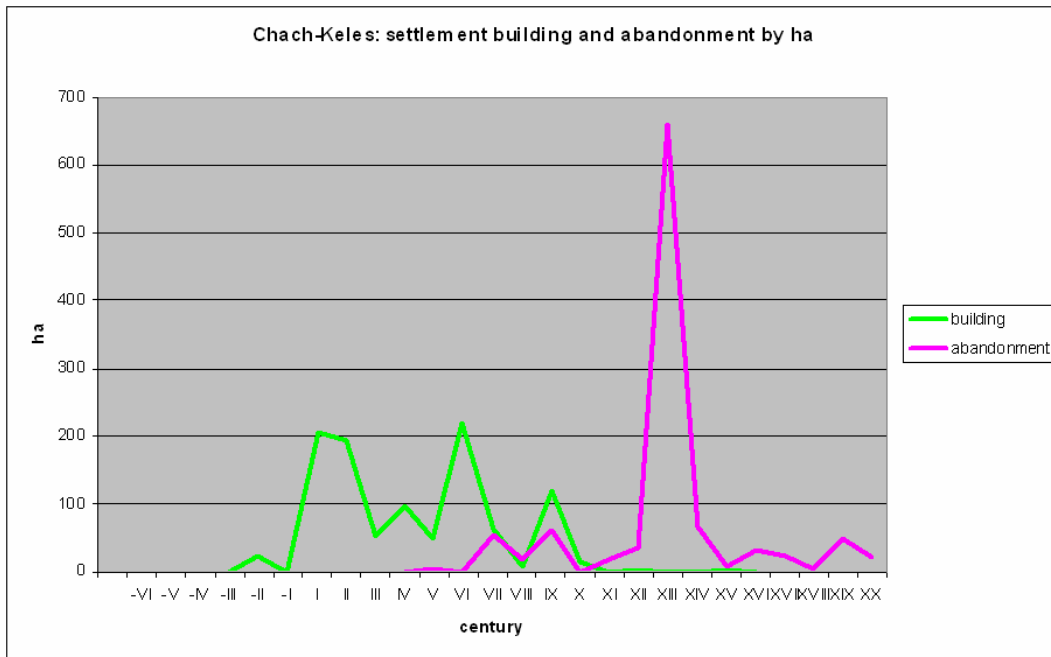


Fig. 9 - Chach-Keles: evolution of settlement building and abandonment by ha between VI BC-XX AD

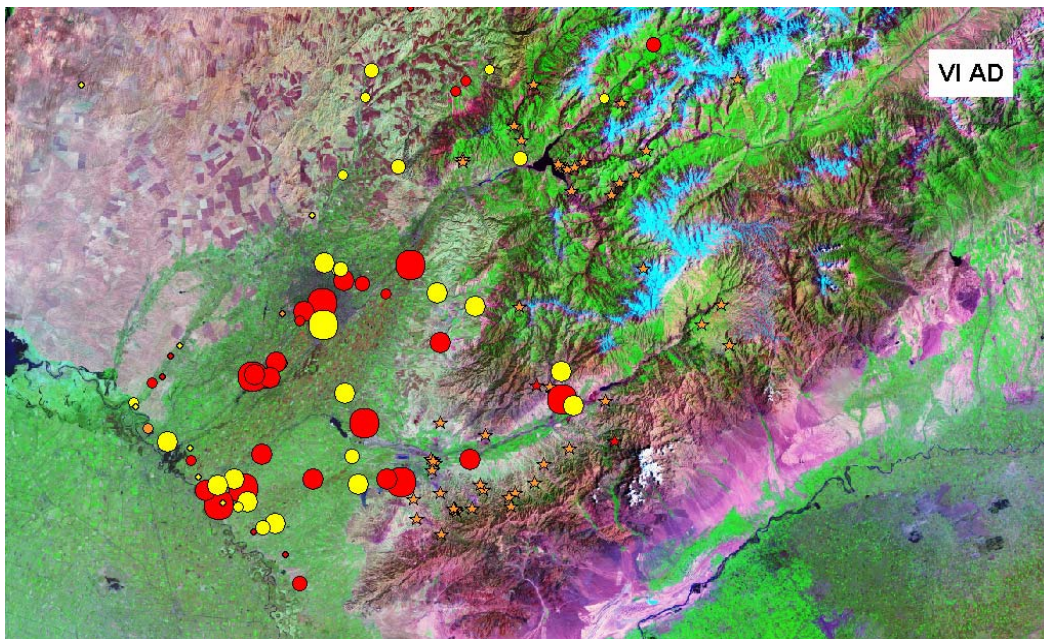


Fig. 10 - Chach-Keles: Map of occupied settlements during the VI AD

In the Talas valley the urban complex starts during the VI-VIII AD with just 6 large structures, of which 3 (one for each of the three mining zones of the valley) are already from the start (or will become soon) the most important metallurgic centers of the valley, and one of them (the heavily fortified Sheldji ¹²) also a minting town. The rest of the urban complex is quickly built during the X AD under the Karakhanids: it consists of 46 more units of which 7 are additional metallurgic towns averaging more than 4-5 ha. The valley saw also the development of wide hydrological, irrigational and agricultural schemes, evidently in support of the high level of mining activity. In the XIII AD, with the decrease of mining and the Mongol invasion, the occupied urban park changes from 52 units covering 135 ha to just 11 units covering 68 ha. Some mining activity keeps going until the

¹² Three circles of walls are surrounding the town (now submersed by an artificial lake), the external ones enclosing an area of 7x4 km (see Fig. 14).

XV AD when the last units, i.e. the 3 earliest metallurgic centers, are also abandoned (Kojemiako, Bubnova 1963). (Fig 11, 12, 13, 14)

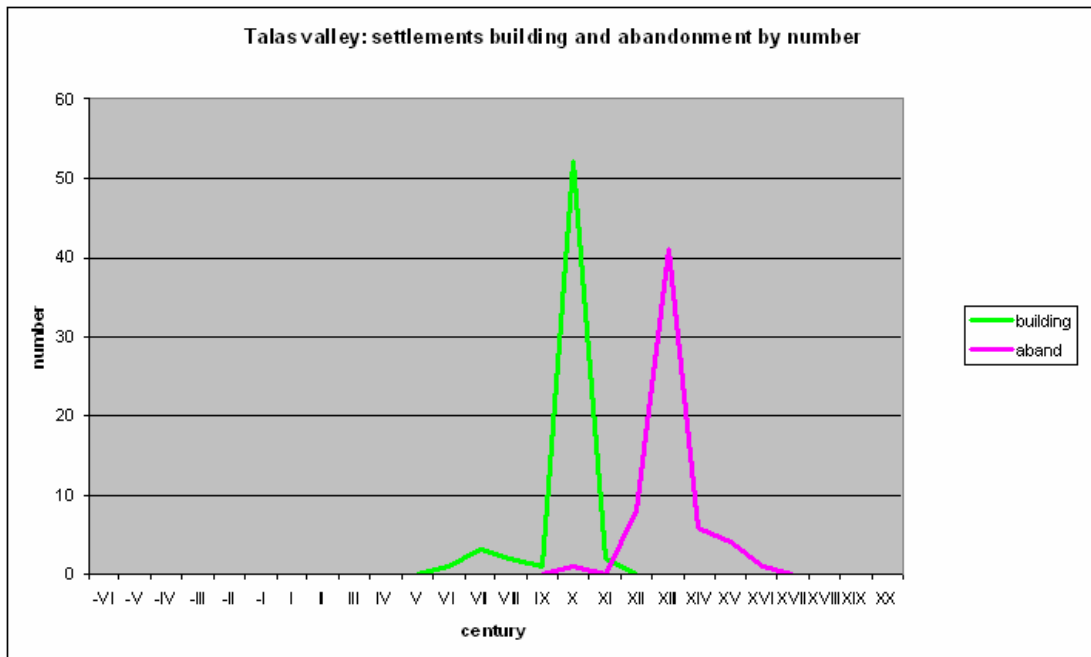


Fig. 11 - Talas valley: evolution of settlement building and abandonment by ha between VI BC-XX AD

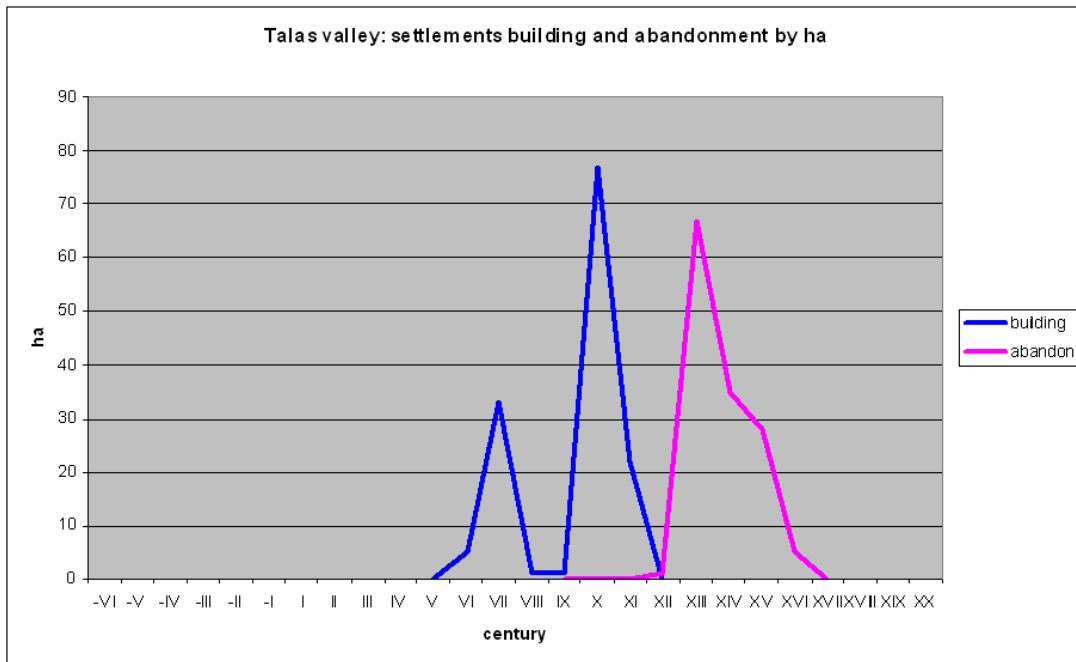


Fig. 12 - Talas valley: Map of occupied settlements during the IX AD

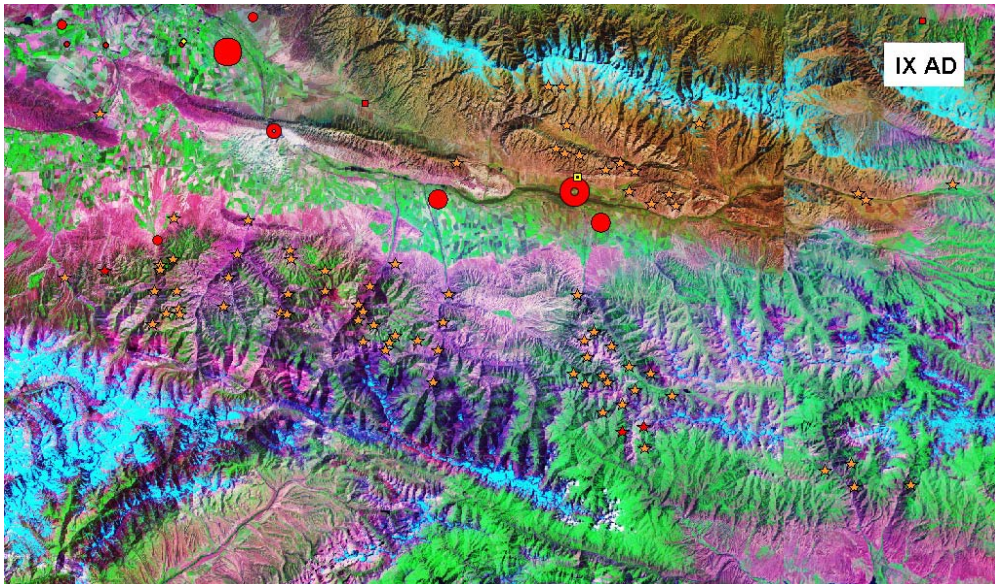


Fig. 13 - Talas valley: Map of occupied settlements during the IX AD

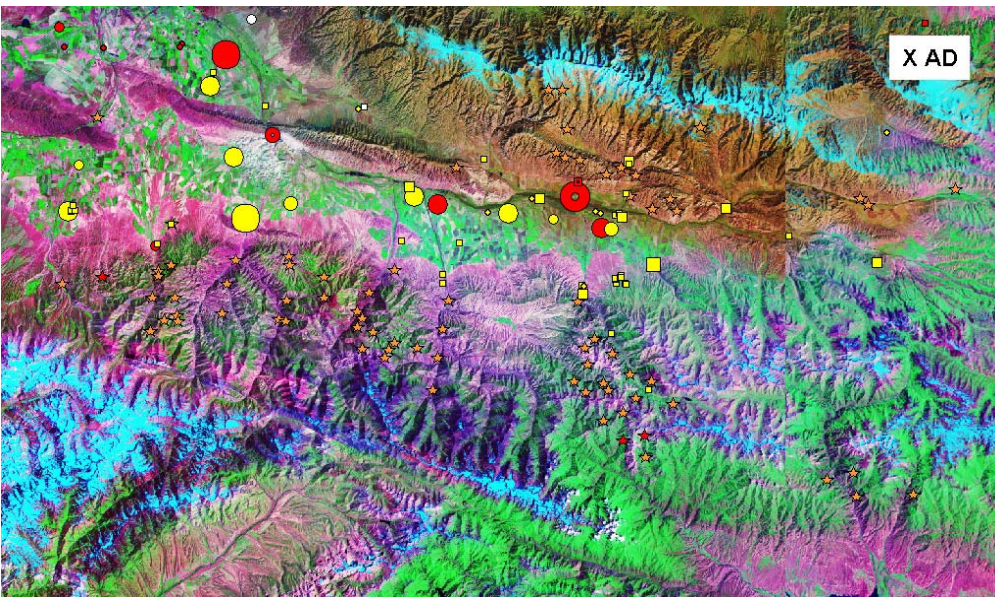


Fig. 14 - Talas valley: Map of occupied settlements during the X AD



Fig. 15 - Talas valley: satellite image of the medieval town of Sheldji (VI-XV AD)

4 - The Mongols and the dismantlement of the NW-Tianshan urban system: military destruction or managerial and monetary incompetence?

The XIII century sees the reduction by 65% of the urban area of the western part of N-Tianshan (Talas, Chu, Semirechie, more or less homogeneously affected) and the reduction by half of the urban area of the Syrdarya (mainly the Chach region). During the following XIV AD the urban situation of the Syrdarya doesn't worsen, but it does it in western N-Tianshan where the urban system, reduced again by half, comes to an end. The reasons of such a quick dismantlement of a huge urban system of more than 2500 ha are probably several concomitant factors.

- The N-Tianshan region is easily favoring a switch to transhumant pastoralism as regulation to an economical crisis, particularly during a pluvial phase, which here is clearly established between the XIV and XVIII AD.
- The XII AD itself has not been a period of development. Mining activity switches to Europe; mismanagement and internal conflicts characterize the last decades of the Karakhanid confederation; and a drying climatic phase starts which will endure for around 150 years.
- The travelers moving together with the Mongol army in 1219 and 1221 don't report about town destructions and are witnessing instead a well organized agricultural and urban landscape. But the travelers crossing the region just 30 year later speak about hundreds of abandoned towns in ruin.
- Mongol rulers have surely been very bad administrators, particularly on monetary matters. For example, as soon as they put their hands on Bukhara, in 1232, they imposed the admonitory course of an overvalued silver-coated copper drachma, a fact that reintroduced barter transactions and paralyzed every large commercial activity until the reform of the 1271 by the local governor Masud Beg (Davidovich, Dani 1998).

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