

Notes

1. The idea of Persia being the country of origin appears to be only a slight modification of the theory about Indian origin and is therefore not separately considered.
2. <http://www.netcologne.de/~nc-jostenge>
3. Indian name for Chess and/or a fore-runner
4. "the surrounding game"
5. The invention of the astrolabe is usually attributed to the Greek astronomer Hipparchos, at around 170 BC. This would mean a relatively late appearance of the astrolabe in Chaldaean astronomy.
6. I saw for instance an engraving of a corresponding board in the cobblestones of Old Jerusalem. Boards of this Tic-Tac-Toe expansion can also be found in some Roman museum collections.
7. There is no conversion in Chinese Chess.

THE MONGOLS AND THE SILK ROAD

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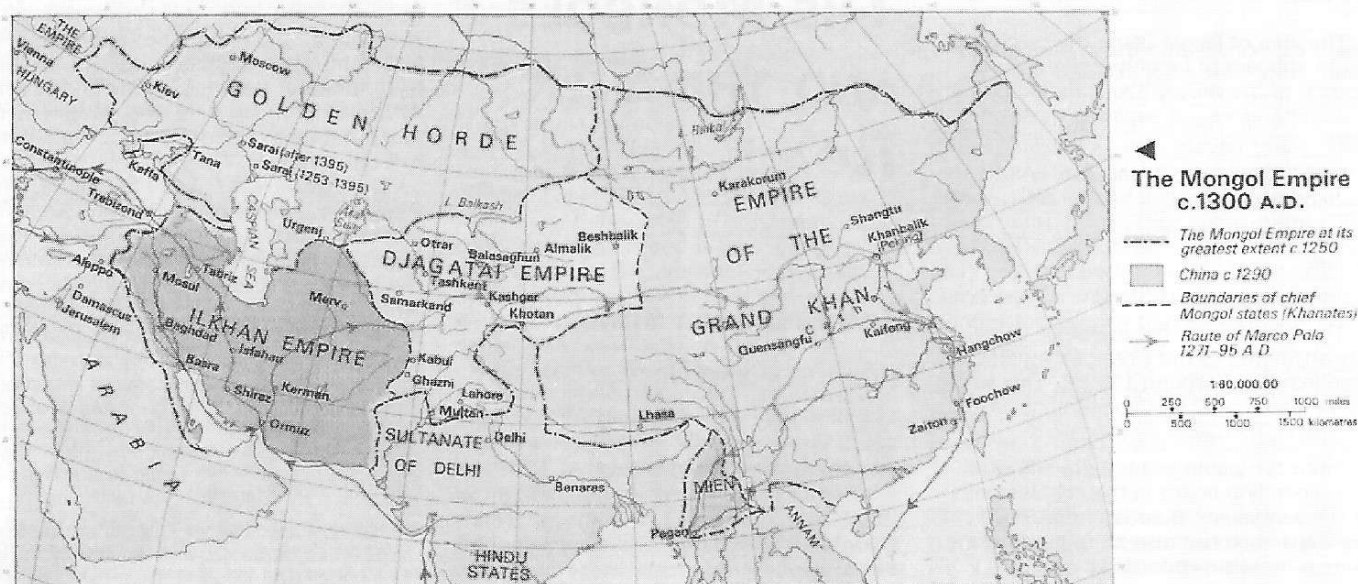
The Mongols reached Europe in 1221, on a reconnaissance of the western extent of the Eurasian steppe, the land on which Mongol armies could most easily support themselves "wherever a horse is able to tread." Their force was a detachment of the great army Chinggis Qan (Genghis Khan) was leading through Central Asia, eastern Iran, Afghanistan, and into India. The detachment crossed northern Iran, wintering in Azerbaijan (1220-21), passed the Caucasus mountains, spent the next winter in the Crimea, explored the Volga region, and returned to Mongolia; it fought winning battles all along the way, including one against an alliance of Turkic Cuman nomads and Russians. The incursion came to the notice of Europe, but since such nomad disturbances in that region were a common occurrence, and because the new intruders had withdrawn, apparently for good, it made little impression.

In 1236-42 the Mongols returned, acting on the knowledge gained on their previous expedition: that the steppe extended into the North Pontic region (Ukraine and Crimea), that their armies could therefore sustain themselves all the way—the horses eating grass and the soldiers eating horses—and that the local inhabitants were incapable of serious resistance. This time the Mongols came in great force, with at least twelve *tümens* (divisions of, nominally, 10,000 men), judging by the number of commanders, mostly princes, mentioned. They overwhelmed the Cumans, Russians and Hungarians, and defeated a large army of Germans and Poles. And although the Mongols shortly abandoned Hungary (probably indefensible by a nomad-based garrison), they based a large army in Ukraine and on the Volga, conscripting many of the Cumans and monitoring their Russian vassals, and conjoined to it further forces in North Central Asia (approximately Kazakhstan), creating the sub-realm of the empire that came to be known in the West as the Golden Horde. This threatening new power caught the attention of Europe: the Mongol empire now had a presence and a frontier in Eastern Europe.

In the Middle East, Mongol task forces, beginning in 1229, established bases in Azerbaijan, and from them intimidated or forced into vassal status the Trebizondian Byzantines, Anatolian Seljuks and Cilician Armenians, among all of whom Westerners, mostly Italians, had an important commercial presence. The European Crusaders on the Levant coast too now had a new, Mongol near-neighbor in Iran and Anatolia. In 1256, these Mongols were heavily reinforced by contingents sent to exterminate the (original) Assassins, subjugate or destroy the Caliphate in Iraq, and extend the empire to the southwest. Although Syria and Egypt were successfully defended by the Mamluks, the Assassins were wiped out, as was the Caliph. Baghdad was wrecked, and much commerce that had been focussed on it now shifted north to Tabriz and Trebizond.

There were many other Mongol armies: nomad forces, Mongols and especially Turks, (which included soldiers, their families, and the domestic animals needed for their support) all across Inner Asia, in North China, and in Mongolia proper; and troops drawn from conquered or vassal settled peoples: Chinese, Iranian, Russian and many others, usually based on farmlands in their home countries, although some were sent abroad on expeditions. For instance, Chinese artillerymen or garrison troops to Iran, or Russians to China. Through the reign of Möngke Qan, (1251-59), all of these forces, from the Ukraine to Manchuria, were controlled from the Qan's camp, usually somewhere in Mongolia, via the yam service, the Mongol pony-express, which connected all of them, and passed, in part, along the Silk Road. In most local matters, however, these armies constituted components of the regional establishments set up by Chinggis in favor of his dynastic family. The establishments now, by the mid-thirteenth century, impinging on Europe from the Western steppe and the Middle East were governed, respectively, by Batu and Hülëgü, both grandsons of Chinggis. Each commanded a regular army of fifteen *tümens*: for instance, Hülëgü's order of battle at the siege of Baghdad included fifteen commanders. Since these commanders led *tümens*, each composed of ten regiments (*hazara*), the military component of each establishment included 150 high officers and their (often multiple) wives. To these were added many administrative officials and their wives. And finally, there were the leader's guards, at least a *tümen* of them (Qubilai, according to Marco Polo, had 12,000 guardsmen, rotating on duty in units of 3000).

These leaders had both imperial and personal interests. The imperial interest, which was shared by the commoners, was Chinggis Qan's project of world-conquest. This project developed from Chinggis' understanding of nomad society and culture, and appraisal of the balance of power at the



start of the thirteenth century. Nomad societies were warrior societies, with abundant manpower available for military undertakings (seven men in every ten; cf. one in ten conscripted from settled populations in Mongol practice), since pastoral subsistence chores could be handled by women and children; with abundant horses (actually, ponies) for cavalry from pastoralism (pastoralism that also met the logistic needs of nomad armies); and home-made weapons—bows, arrows and clubs—effective in combination with the ponies. This military aptitude derived from pastoralism in another way also. Small camps simplified herding and reduced the need for nomadic movement, but also much diminished security from rustlers and kidnappers (Chinggis and his family had their animals rustled twice, two women—his mother and his wife—raped, and himself kidnapped). Large encampments, *küriyen*, with 2,000-3,000 families and huge herds, perhaps 200,000-300,000 sheep or equivalents, gave protection, within a circle of wagons, but required very frequent moves as accessible pasture was used up. The nomads had to be prepared for fight or flight at all times, and part of the preparation involved cultivation of appropriate appreciation and attitudes. One should understand when to fight and when to run, and know that, while strength, skill, weapons and numbers, are very important, they are not all-important. Bravery, audacity and cunning can alter the odds. Nomad men, in their constant insecurity, had to try to think like heroes, to imagine themselves as heroes, so as to be able, if necessary, to act like heroes. Nomad culture was, and in places still is, a warrior culture. When Chinggis Qan invited these would-be heroes to participate in the greatest military undertaking of all time, they could not turn him down.

"This is the order of the everlasting God. 'In Heaven there is only one eternal God; on earth there is only one lord, Chinggis Qan. This is the word of the son of God [Chinggis]... which is addressed to you. Whosoever we are, whether Mongol or Naiman or Merkit or Muslim, and wherever ear is capable of hearing, and wherever a horse is able to tread, [italics added] there make it heard and understood.'" (Letter of Möngke Qan to King ["Saint"] Louis IX of France, in Rubruck, 202)

Chinggis issued his invitation in ca. 1203, when he was winning the struggle for rule over all of (Outer) Mongolia. He knew the military resources of Mongolia, knew that the only comparable forces, the largely nomad cavalries of China's northern frontier (in today's Manchuria and Inner Mongolia) were divided between the Hsi-hsia and Kin, and within Kin between Jurchen and Kitan, so that the Mongols could attack them severally with great superiority. Success in this undertaking would give Chinggis all the (surviving) cavalry of eastern Inner Asia, and the largest such force anywhere. World conquest, which had been talked about by Huns and Turks in times gone by, did not seem like empty boasting now.

"[Chinggis Qan] made many laws and statutes.... [one] is that [the Mongols] are to bring the whole world into subjection to them, nor are they to make peace with any nation unless they first submit...." (John of Plano Carpini, 25)

By the mid-thirteenth century, this project was well under way, with giant armies on

the march to the Middle East (as mentioned above), into southern (Sung) China, and against Korea; large raiding parties also intruded repeatedly into northwestern India. These expansive efforts continued until, roughly, the turn of the century: South China was conquered, Japan, Burma, Vietnam and Java were attacked, and the Middle Eastern Mongols kept trying to seize Syria. Besides these substantial campaigns, the raids on India continued, as did incursions into Eastern Europe.

This project gave the Mongol leadership a lively interest in the countries as yet beyond their reach. To obtain such information, the Mongols used exploratory expeditions, often over great distances, as with the foray (mentioned above) through northern Iran, the Caucasus, southern Russia, the Crimea and Central Inner Asia. They also interrogated prisoners, and questioned travellers like Rubruck and merchants like Marco Polo.

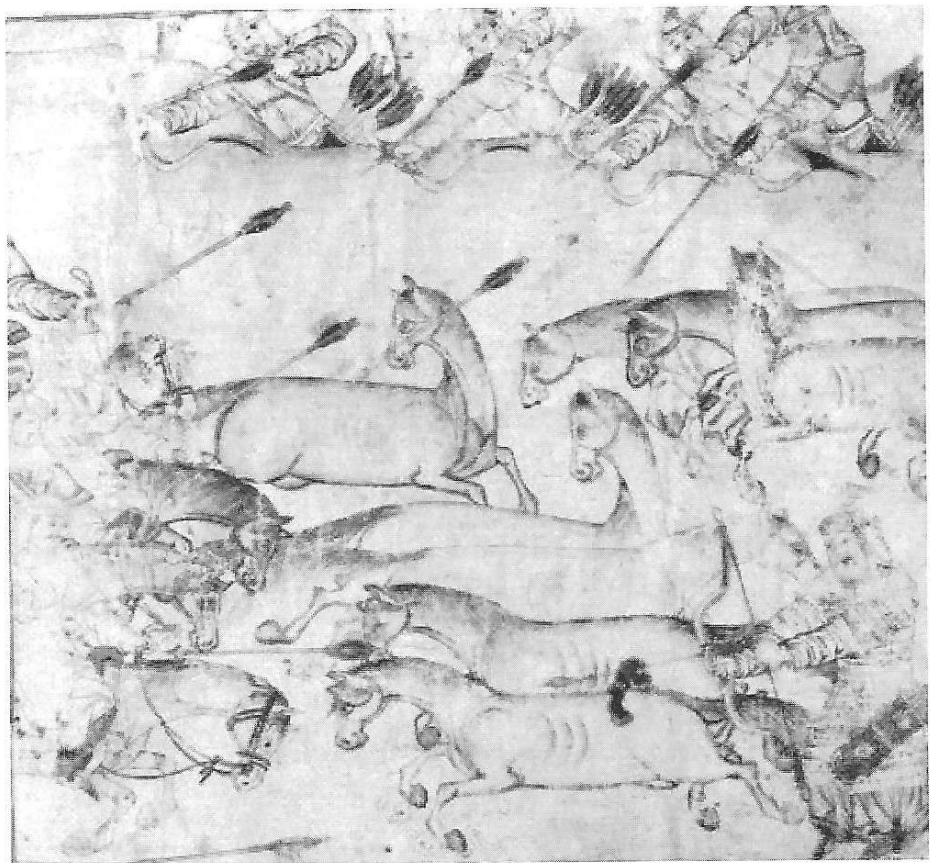
"[Möngke Qan's officials] began to ask us numerous questions about the kingdom of France: whether it contained many sheep, cattle and horses—as if they were due to move in and take it all over forthwith." (William of Rubruck, 155-6)

"When Messer Niccolo [Polo] and Messer Maffeo [Polo] arrived at the court of [Qubilai Qan] he received them honorably and welcomed them with lavish hospitality and was altogether delighted that they had come. He asked them many questions: first about the Emperors, the government of their dominions, and the maintenance of justice; then about kings, princes, and other nobles. Next, he

asked about the Lord Pope, and all the practices of the Roman Church and the customs of the Latins. And Messer Niccolo and Messer Maffeo told him all the truth about each matter...." (Marco Polo, 36)

Some of the results of these inquiries may be found in the work of the Mongols' Persian vizier, Rashid al-Din (II, 325), as, for instance, the figure of 400,000 for the army of Hungary (a mistake, based on the Mongols' calculation that, as in nomad societies, the army included the whole adult male population). The intelligence requirements of the Mongol army thus supported a policy of receptivity to would-be visitors from the outside world.

As for the personal interests of the Mongol elite, these varied, of course, from person to person, but most wanted to enjoy the fruits of their extraordinary conquests. They had previously led a simple existence in the fastnesses of Outer Mongolia; Chinggis and his small following, early in his career, successfully pillaged a Tatar community, and came to be "considered grand and gained renown" because the loot included a silver cradle and a gold-brocaded quilt, and "at that time such luxury items were rare among the Mongols." (Rashid I, 164) During Chinggis' campaigns of expansion into China, and especially with the taking of the Jin dynasty's northern capital (approx. modern Beijing) in 1215, the Mongols gained an appreciation of the wealth, especially in foodstuffs and textiles, now available to them through plunder and extortion, taxation and exchange. The government established a program intended to provide for the general population of Outer Mongolia very substantial supplies of food and drink (more, in fact, than could be supplied). More successfully, the Mongol dynastic and military elite provided themselves with the best of everything. They consumed large volumes of alcoholic beverages such as fermented honey (bal) and millet (buza), rice mead, and wines, exotic to the Mongols, and, in the case of wine, pleasingly powerful by comparison with their domestic tipple, fermented mare's milk (qumis), which they also continued to consume in quantities. Foodstuffs were likewise lavishly provided, especially horsemeat, the favorite, and mutton, the most widely available in the pastoral economy. For a quantifiable example, William of Rubruck (202) reported the following provisions for a banquet hosted by Möngke Qan: "a hundred and five carts laden with mare's milk, and ninety horses to be eaten." Ninety Mongolian ponies would have yielded about 20,000 lbs of meat, three lbs of meat for each guest at a party for 7,000 (consisting largely of the Qan's off-duty guards, most likely); assuming 1000-lb loads on the drink-carts, each of the 7,000 would also have been served about two gallons



of qumis (qumis is a "lite" drink, hence the large volume, the approximate equivalent of 19 shots of 90-proof whiskey).

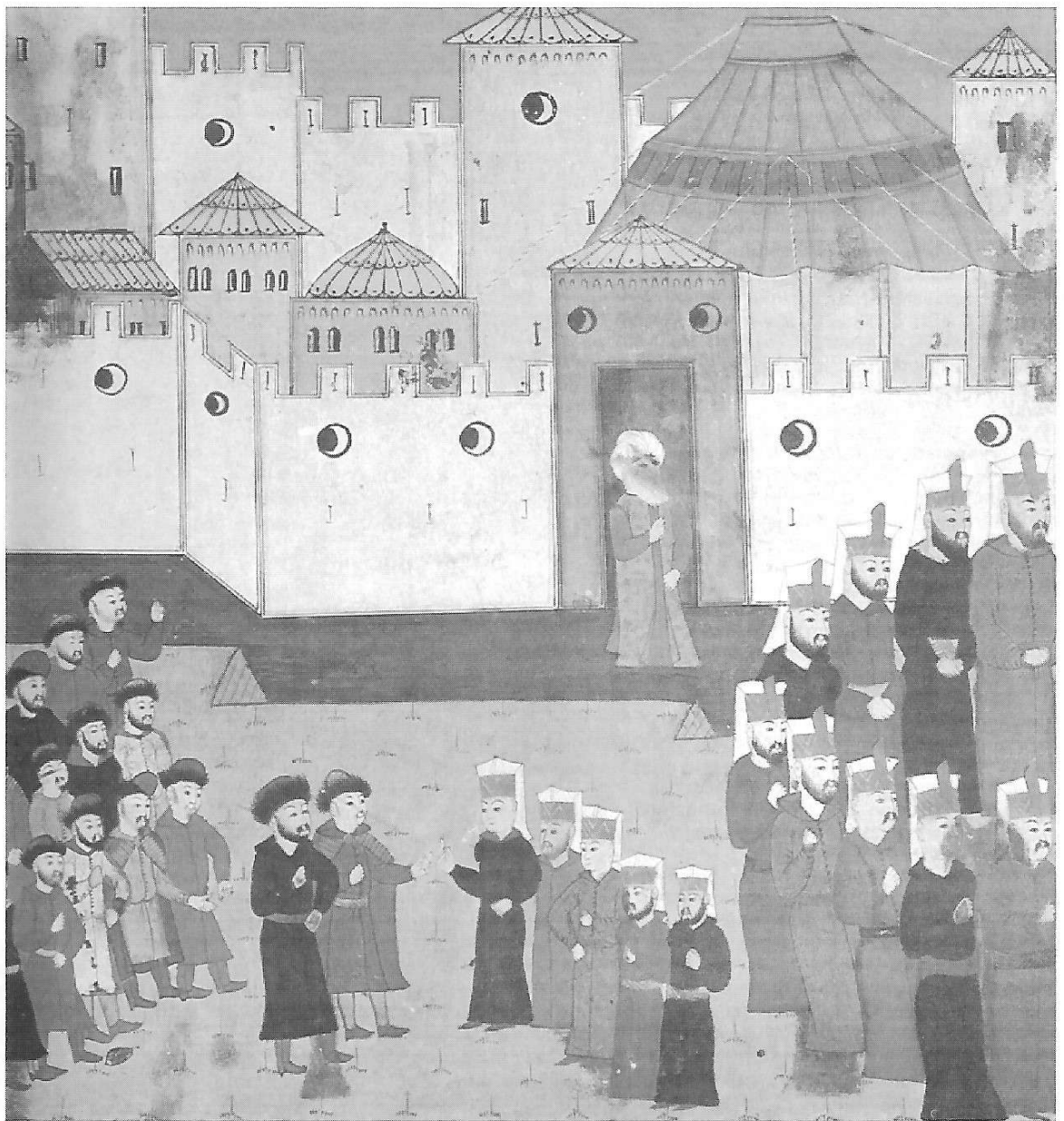
The Mongol elite enjoyed many such parties—and they dressed up for them. Qubilai entertained at festivals for the New Year and for each of the thirteen lunar months, on assorted "festive occasions," and on birthdays. Birthday parties would have been frequent: Qubilai had four wives and 22 sons by them; daughters not specified, plus a number of concubines and 25 more sons (daughters again not counted); and the birthdays of his other relatives, his great commanders, their wives and children, were doubtless celebrated as well. "All the [Mongols] celebrate their birthdays as festivals," says Marco Polo. (137f) The guests probably included all those eligible to have parties in their honor, and, for the lunar month festivities, the 9,000 off-duty guards, and most likely their wives, were also invited. Guest lists of 40,000, as reported by Marco Polo (137f), seem quite plausible. At these many parties the top Mongols wore very fancy dress, in many cases, robes of cloth-of-gold (nasij). Those of high rank had nine different banquet-outfits for winter wear, and fourteen for summer, including one of nasij for each season. Since there were more than 20,000 top-level bureaucrats to provide for in the Mongols' East Asian (Yuan) realm alone, around 50,000 robes would have been

needed. The guards, all 10,000-12,000 of them, were issued banquet robes as well, a different one to wear at each of the thirteen monthly celebrations.

Cloth-of-gold served not only as clothing, but for bed covers, animal-caparisons, and draperies. In the latter category, the embellishment of the huge royal palace tents, found in the camps of all the regional rulers, as well as in some of their urban centers, involved prodigious quantities of nasij, as their interiors were entirely lined, walls and ceiling, with the cloth-of-gold; one such tent is said to have seated 1,000 persons. Some of the great officers and officials also possessed such tents. And since these great tents could not be pitched and struck quickly—the ordinary Mongol ger, housing a single family, could be erected or taken down in less than a day, whereas one palace-tent, of the Middle Eastern ruler, Ghazan Khan, took a month to set up—the rulers probably had several of them, one in each of their most-regularly used camp-sites, at minimum, one each in their summer-camp (yaylaq) and winter-camp (qishlaq).

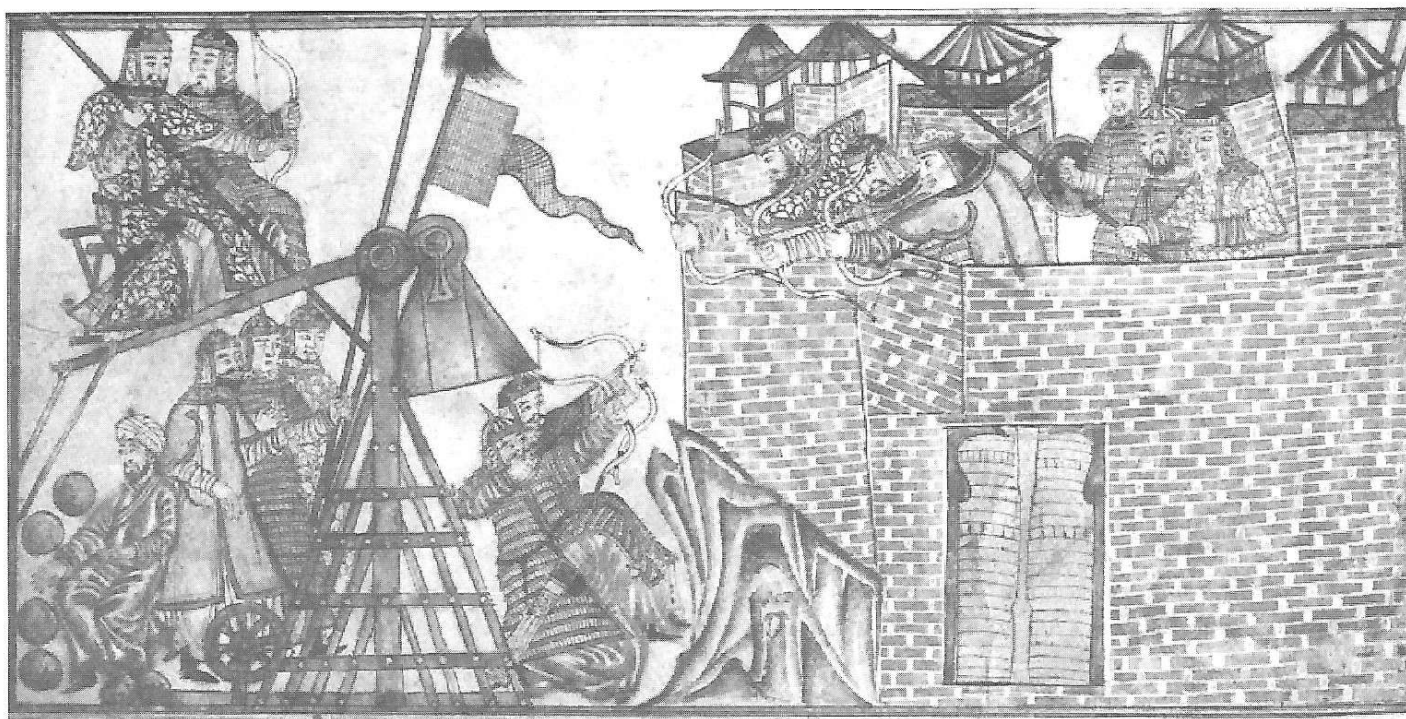
The Mongol grandees not only wanted to enjoy silks, but to profit from them as well. Silk had since time immemorial been a kind of currency in China, a tool of its diplomacy, and the basis of its international trade over the aptly named Silk Road. Owing to the in-

ternational popularity among the wealthy of silk, its production had spread across Inner Asia to the Middle East, where the Mongols found and took over its silk factories as they had in China. Furthermore, they established new silk factories, in Inner Mongolia, the Tarim Basin, and two in China proper, to increase the volume of silk production, and to develop new silk products. Chinese weavers were sent to Samarkand to collaborate with the local Muslim weavers, and Muslim weavers—who were specialists in cloth-of-gold—were brought to China. Wealthy Mongols invested in these enterprises, and in the vending of their products, forming commercial associations (ortuqs) with merchants experienced in transporting—over the Silk Road, for instance, but also by sea—and exchanging these goods abroad. Such Mongols could also arrange for their merchant partners to use the facilities of the yam to obtain provisions, fresh animals and secure lodgings for their caravans. In the century, approximately, of Mongol rule in Eurasia, the Silk Road flourished as never before. Disputes between the Mongol realms sometimes delayed or diverted commercial traffic, as happened to Marco and the other Polos, who had to resort to a slow and difficult route between Iran and Eastern Turkestan on their way to China to avoid rumored strife in Transoxiana. But the Mongol regional governments usually, and the Mongols generally, remained eager to promote and engage in commerce, even, sometimes, at risk to their own interests. Mongols in Afghanistan, for instance, allowed regular passage of large numbers of horses being exported by the Golden Horde (the Mongol realm in modern Ukraine, Russia and Kazakhstan) to India, for use by the sultans of Delhi against Mongols invading from Afghanistan.



Under the Mongols, furthermore, the Silk Road had more routes than in earlier times. Before the Mongols unified Inner Asia, its nomads were divided among a plethora of independent, rivalrous tribes and great-power client-tribes set against the independents. In this geo-political setting, trade was often—and often rightly—viewed as trading with the enemy and discouraged by prohibitions and despoliations. Such dangers minimized commercial transit over the steppe route through the “nomad zone,” despite its considerable logistical advantages: grasslands and water-sources stretching between Hungary and Manchuria supporting myriad potential transport and food animals. Instead, much if not most of the time, merchants preferred to risk desert travel, whose predictable hazards made commercial transit difficult, but also precluded nomad inhabitation and interference.

Now, under the Mongols, commercial and other travelers could use both the steppe and the desert branches of the Silk Road. Plano Carpini and Rubruck, respectively spy and missionary, were taken by Mongol escorts over steppe routes, at paces that they found impressive and uncomfortable. They reported long days in the saddle, lots of trotting, and long daily distances covered, although the overall distances divided by the days of journeying mostly indicate an average pace of about 20 miles per day, which conforms to the distance between stages of the yam; on Rubruck’s return trip, however, the daily average was 36 miles per day. The yam supported not only the pony express of the Mongol command and control system, but the merchant caravans that brought the qan and his court, and the establishments of the dynastic and military elite, the spoils of empire, and distributed



the surplus luxury goods from the factories that catered to these Mongol grandees.

Very shortly after coming into direct contact with Europe, The Mongols and their commercial associates began selling to Europeans; China silk could be bought in Italy by 1257. Not long after, Italian merchants reached China. Marco Polo's father and uncle arrived in ca. 1265, on a diplomatic mission for which they were recruited by an envoy of Hülegü while they were in Inner Asia on a commercial venture: bringing jewels as "gifts," to the ruler of the Golden Horde, in return for which they were presented with goods worth twice as much as the jewels. The Polos traveled to China again in ca 1275, taking Marco along, hoping, no doubt, to buy such goods at the source and reap the largest share of the profit from importing them into Europe. This undertaking was apparently sidetracked, and they spent the next twenty years there, with Marco supposedly in the Qan's service, but in the end commerce won out, and they returned to Italy laden, according to Marco, with jewels. The reported success of such early adventures, substantiated by imports of real goods, then led to much more commercial activity on the part of Europeans in Inner and East Asia. By ca. 1320, the way east, and the most reliable mercantile strategy to employ there, could be reduced to a succinct set of recommendations by a Florentine banker, Francesco Balducci Pegolotti, experienced in eastern Mediterranean commerce. The route he suggested began at the port city of Tana, in the northeast corner of the Black Sea and easily accessible by Italian

shipping. From there, one hired transport to Astrakhan at the mouth of the Volga river; with a horse-cart, the journey was 10-12 days, or 25 days by ox-cart. Boat passages up the Volga took the travellers to the imperial towns of Saray (Palace) in one day, and Saraychuk (Little Palace) in eight days. These were seasonal residences of the nomadic Mongol rulers of the Golden Horde, and therefore considerable commercial centers. The next leg of the journey led to Urgench on the Amu Darya River, somewhat south of the Aral Sea, 20 days by camel-wagon; Pegolotti recommended that the travelling merchant invest his capital in fine Italian linens and sell them in Urgench, where they brought high prices, in return for Mongol currency: the silver ingot of about 7.5 ounces, about 216 g, called *sum* (*sommo* in Italian). With these, and perhaps some of the best linens, the merchant should proceed to Otrar on the Syr Darya (north of modern Tashkent), 35-40 days by camel-wagon, then to Almaligh on the Ili River, 45 days by pack-donkey, and then to the Chinese cities of Kanchow, 70 days by donkey, and the great port-city of Qinsay (modern Hang-chow), 45 days—maybe more—by horse. The pace of these commercial travels approximated that of Plano Carpini and (for his outward journey) Rubruck: about 20 miles per day. At Qinsay, the silver *sum* ingots had to be exchanged for the legal tender of China: paper money called *balish* by Pegolotti (and equivalent in value, presumably, to the silver *balish*, a large ingot of about 4 pounds 12 ounces, or 2,160 g). After Qinsay, the merchant could go on to the Mongols' principal political center in China, Khanbaligh ("The Qan's

City," also Da Du or modern Beijing). Silk could be purchased in China at one *sum* for 20 (Genoese) pounds; with the 25,000 gold florins of venture capital suggested by Pegolotti, exchanged for linen and then *sum* at 5:1, a merchant could buy, after expenses of (perhaps) 400 *sum*, around 92,000 Genoese pounds of silk, and, assuming a safe return to Italy, sell them for about three times their cost. The Silk Road, under the Mongols, ended in Italy, whence the riches of the Mongol Empire found their way to the rest of Europe. "Tartar cloth" is mentioned not only by Dante and Boccaccio, but by Chaucer, and many examples of it have been found in Europe.

These close and frequent contacts with the Mongols revealed a new world to the Europeans. Previously, the hazards of travel among nomads, and the barriers to passage through the Muslim states had left the West almost entirely ignorant of the countries and peoples beyond Russia and the Middle East. India and Ethiopia, conflated, were located past the Muslims; the land (China) whence Rome had, indirectly, imported silk, had been forgotten; and these farther eastern regions, factually unknown, were populated in the Western imagination by notional monsters or imaginary Christian kingdoms in accordance with wishful thinking or even stories passed on by Muslims and by the Mongols themselves. John of Plano Carpini, the first European visitor to report on Mongolia, was told, for instance, of dog-headed people, and of people with but one leg and arm, who moved by hopping or turning cartwheels; the dog-headed people were already "known" to Muslim and

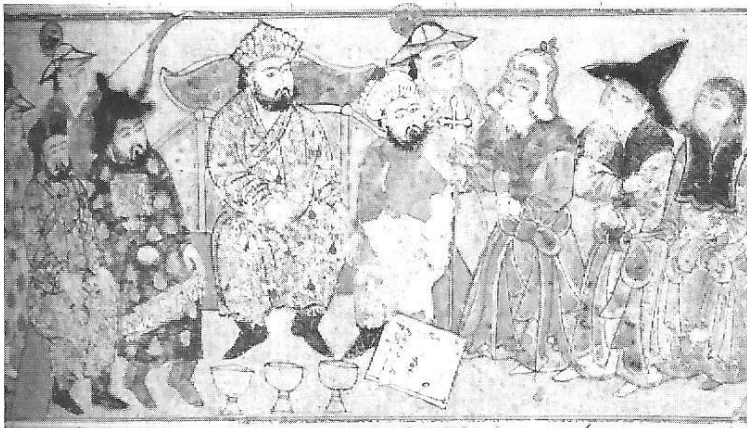
European writers. William of Rubruck (170), the next to report from Mongolia, inquired more skeptically about "the monsters and human freaks who are described by Isidore and Solinus [the dog-headed and single-limbed]" (R/J&M, 201) and, on finding no eye-witnesses, doubted their existence. (We should remember our own Bigfoot and Loch Ness monster as we smile at medieval credulity.) Besides the freaks, there was also the "Christian priest-king, Prester John," wishfully developed in the twelfth century from reports out of (actual) Ethiopia of their priest-kings entitled dzan, together with rumors of the troubles of the Muslims with non-Muslims on their eastern frontiers—actually the conflict between the Muslim Seljuks in Central Asia and the Buddhist Qarakitai—and the fact, albeit unknown in the West, of a considerable presence of Nestorian Christians in Inner and East Asia. Prester John allegedly headed a great Inner Asian Christian power that was going to attack the Muslims from the East in support of the Crusaders in Palestine. Western visitors to the Mongols at first tried to identify Prester John among the recent, pre-unification tribal leadership of Mongolia;

the Kerait chiefs had, for instance, been under Nestorian influence. They sought also to reach Mongol leaders alleged to be Christians, to little avail, since these were essentially polytheistic (a position difficult for monotheistic Christians and Muslims to grasp), with perhaps individual preferences for particular Nestorian priests. Marco Polo (119) gives a quotation of Qubilai (Kubla Khan) which expresses the Mongol attitude well: "There are four prophets who are worshipped and to whom all the world does reverence. The Christians say that their God was Jesus Christ, the Saracens Mahomet, the Jews Moses, and the idolaters Sakyamuni Burkhan [the Buddha], who was the first to be represented as God in the form of an idol. And I [Qubilai] do honour and reverence to all four, so that I may be sure of doing it to him who is greatest in heaven and truest; and to him I pray for aid." But as the reports of Carpini and Rubruck, of Marco Polo and others, accumulated, the freaks and monsters were relegated to the fringes, along with Prester John, and Christian Mongols became a forlorn hope. These imaginings were displaced by a new, and true, knowledge of a huge

empire, with vast populations of real people, possessing immense wealth, some of which latter could be shared by Westerners on very good terms.

Just as the Empire's territories, peoples and riches were becoming well-known in the (especially Italian) commercial circles of Europe, the Empire was beginning to implode. After the death of Möngke Qan in 1259, imperial unity had been lost. But for another three-quarters of a century, the four (or, occasionally, five) now-independent Mongol realms that had been sub-units of the unitary empire, managed to maintain a degree of economic cooperation despite sporadic, and sometimes prolonged, hostilities. The Polos had had to use back-ways to China to avoid trouble, but Pegolotti's silk buyers could go straight through from Tana to Kanchow, Qinsay and Qanbaligh. But in 1335, the Mongol ruler of the Middle East, Abū Sa'īd, died without an heir, and his officials and officers, unable to agree on a successor, fought one another to stalemate and collapse. The Middle Eastern branch of the Road closed, and with that, European access to its desert route. The other branch,





via the Golden Horde (Tana to Urgench and on East), remained open until 1368 when the Yuan dynasty Mongols abandoned China in the face of the Ming rebellion, opening a long period of Ming-Mongol antagonism and conflict that prevented direct access to China across the steppe. Direct European contact with China thereafter became impossible, and indirect trade between Europe and China declined to pre-Mongol levels. The Chinese, no longer conscripts in the Mongol program of world-conquest, and fully content with their own vast resources, lost interest in, as well as contact with Europe. But European awareness of China did not similarly decline. Memories of the commerce carried on by Pegolotti's merchant associates, and especially Marco Polo's fascinating stories, maintained knowledge of the Far East, and the desire of renewed access to it.

During the fifteenth century, European geographical speculation about ways to the Far East that would avoid hostile Muslims and unreliable nomads, was stimulated by the rediscovery and widespread publication of the second century Alexandrian geographer Ptolemy's Geographical Survey, which encouragingly, but incorrectly, asserted that the Ocean extended, uninterrupted, from the western shores of Europe to the coasts of East Asia, and helpfully, if mistakenly, calculated that the Oceanic share of the world's circumference (the world was, and long had been, generally known to be round) was about 180°—about 30% less than the actual distance. Even this reduced breadth of the ocean, however, was too much for any European ship to cover without reprovisioning. Christopher Columbus overcame this problem. Columbus had read, and become enthralled by, Marco Polo's stories, to the point of determining that, by whatever means necessary, he would plan a feasible voyage to East Asia and carry it out. His means involved selective adoption of miscalculations by various geographers that minimized the distance still more: a French astrologer gave the Ocean 135°; an Arab astronomer posited a shorter degree; and Columbus trimmed the Arab's figure by expressing it not in nautical miles, but in Roman, 20% shorter. This brought East Asia

within range: about 2,700 miles (the actual distance is around 13,000 miles.) Columbus was a lucky man.

Following a tireless effort to find financing for his project, he succeeded in obtaining, over the objections of a scholarly advisory committee, funds

for his intercontinental expedition from the Spanish royals. And fortunately for him, there was in fact another continent within range.

Thus the Mongols, and their best salesman, Marco Polo, turned out to be responsible, not only for revealing a Far Eastern world new to Europe, but for instigating the discovery—by mistake!—of another New World.

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