AGED WITH SWISS TECHNICAL ASSISTANCE, IT PRODUCED A TASTY KIND OF FRENCH TOMME DE SAVOIE, WHICH WAS SOLD ALMOST ENTIRELY IN KABUL UNDER THE NAME PANIR-E BOGHARR (r), OR MORE SIMPLY BOGHARR, UNTIL IT WAS CLOTHED IN 1360 S./1981 BECAUSE OF GROWING POLITICAL INSTABILITY IN THE REGION (BALLAND, 1987, PP. 254-66).

IN THE 1360 S./1980S, AFGHAN CHEESE PRODUCTION THEN REVERTED TO THE PREINDUSTRIAL, DOMESTIC SECTOR, WITH IMPORTANT MARKETABLE SURPLUSES. THE TOWNS, PARTICULARLY MUROOLOH KABUL, CAME TO DEPEND ALMOST ENTIRELY ON IMPORTED CHEESES. THE U.S.S.R. AND OTHER EAST EUROPEAN SOCIALIST COUNTRIES REPLACED THE FEDERAL REPUBLIC OF (WEST) GERMANY AND DENMARK AS THE MAIN SUPPLIERS. NO FIGURES ON THIS TRADE ARE AVAILABLE, BUT IT IS CERTAINLY SMALL AND IRREGULAR.

IN PERSIA, ON THE OTHER HAND, THE COMBINATION OF DECLINING DOMESTIC AND GROWING INDUSTRIAL PRODUCTION (TOTALING CA. 100,000 TONS, ACCORDING TO THE U.N. FOOD AND AGRICULTURAL ORGANIZATION, THOUGH THE FIGURE IS QUESTIONABLE) IS NEVERTHELESS FAR FROM SUFFICIENT TO MEET THE INCREASING NATIONAL DEMAND, AND IMPORTS HAVE BEEN ON THE RISE SINCE THE EARLIER 1360S./1980S. IN THOSE YEARS PERSIA ROSE FROM EIGHT TO FIFTH AMONG CHEESE IMPORTERS IN THE WORLD. In 1363 S./1984 IMPORTS REACHED A PEAK OF 126,600 TONS, THAT IS, 7.2 PERCENT OF THE TOTAL EXCHANGES OF CHEESE IN THE WORLD (TAB. 36) AND HIGHER THAN THE NATIONAL PRODUCTION. THE MAIN SUPPLIER WAS BULGARIA, WHICH SHIPPED VIA TURKEY A SOFT CHEESE SELLING IN TEHRAN FOR THREE OR FOUR TIMES LESS THAN THE LOCAL SIMILAR TYPE.


CHEMISTRY. SEE KIMÁM.

CHESS, a board game known in Sanskrit as caturãgaes ("having four members," a common designation for an army of four divisions); in Middle Persian as navragas (whence Pers. soz, Fr. eschez, Eng. chess, possibly It. scacchi, Ger. Schach, etc.); in Arabic as al-sauwar (or al-sawran) (whence Sp. ajedrez, OFr. eschec, Eng. chess, possibly It. scacchi, Ger. Schach, etc.), the latter two forms also under the influence of Persian šáh ("king").

i. The history of chess in Persia.
ii. Chess terminology.
i. THE HISTORY OF CHESS IN PERSIA

The game of chess has a long history in Persia. Although its origin is wrapped in obscurity, it appears from its name, the organization of its pieces, and the earliest Persian traditions that it developed out of various ancient Indian board games (e.g., *ātāpāuca, cf. Mid. Pers. *hāšt-pāy; see below). Indeed, chess may have been known already to Patañjali (2nd cent. B.C.), but the first certain mention of *catur-udga- occurs quite late, in the 6th century of our era (cf. Thieme, p. 215), which is also the period in which the game seems to have been brought to Persia. Three Book Pahlavi texts mention chess (*caturang): Kān-nāmāk i Artsēxēr i Pāāgān (The book of the deeds of Ardāšir I, son of Pābag), Xvarōn u rētak (Kosrow and his page), and Vičērtīn i caturang u ništān i Artsēxēr (The explanation of chess and the invention of backgammon). In Kān-nāmāk (2.12) it is said that Ardāshir “with the help of the gods became more victorious and experienced than all others in polo, horsemanship, chess, backgammon, and other arts,” and in the small treatise on Kosrow (Parvēz) and his page, the latter declares (15) that he is superior to his comrades in chess, backgammon, and hāšt-pāy. The author of Vičērtīn i caturang describes how the game of chess was sent as a riddle to Kosrow Anōširvān (r. 531-79) by the “king of the Hindus Dēvārman” (?) with the envoy Xēxtarēs (?) and how the riddle was solved by the vizier Vazurgērīn (Borozangīn, q.v.), who in turn invented the game Nēv-Artsēxēr (i.e., nārd, backgammon) as a riddle for the Hindus. These three Middle Persian sources do not, however, give any certain indication of the date when chess was introduced into Persia. Although Kān-nāmāk and Xvarōn u rētak refer to kings of the 3rd and 6th-7th centuries respectively, the mentions of chess are simply conventional and may easily represent late Sasanian or even post-Sasanian redactions. The story told in Vičērtīn is clearly legendary and cannot be accepted as an accurate historical account. This story appears to be the subject of a wall painting of the early 8th century C.E. at Pāyandhikht. There two men play a board game in the presence of the king; one of them wears the costume and hair style of a Hindu and is making the traditional Persian gesture of surprise (forefinger pointing to lips), as if impressed by his opponent’s prowess or intelligence (Busaghi, p. 45; for the dating of the wall paintings at Pāyandhikht, see Belenitskii and Marsurkh, pp. 35-46).

Although it is probable that chess was known and played in Persia at the end of the Sasanian period, the earliest certain evidence is from after the Islamic conquest. The story recounted in Vičērtīn was retold in Arabic prose by Tāmahli (350-429/961-1038) in Gorār al-šar (pp. 622-25) and in Persian verse by Ferdowski (d. 411/1020) in Sāh-nāmā (Moscow, VIII, pp. 206-16; ed. Mohl, VI, pp. 193-201). In the latter work the story was expanded to include an explanation of the Indian origin of chess (Moscow, VIII, pp. 217-47; ed. Mohl, VI, pp. 201-23). Gav and Tālḵand, two princes and half-brothers, sons by a single mother of the Iranian king Janbūr and his younger brother and successor Māy, both lay claim to the throne after the death of Māy. War broke out between the two, and Tālḵand, trapped on the battlefield without possibility of either escape or attack, died mysteriously in his golden saddle. His brother invented the game of chess in order to convey to their mother the news of this event.

A great variety of legends about the appearance of chess in appear in early Arabic sources (cf. Ebn al-Nadīm, ed. Flügel, pp. 172-73, tr. Dodge, I, pp. 341-42). Mas‘udī (d. ca. 345/956), for example, describes how a series of learned kings of ancient India introduced various arts and sciences (Morūj, I, pp. 153-61; ed. Pollut, I, pp. 86-90), Bahram (Brahmun) was the first. Under his son Bāhibad the game of nārd was invented, and a couple of generations later King Dādšālam composed the book *Kallā va Dēvārma. In the reign of his son Bāhibat the game of chess was invented, and certain of its mathematical properties were explored, especially the calculation and cosmological interpretation of the number of squares from 1 to 64. Mas‘udī (Morūj VIII, pp. 312-17; ed. Pollut, V, pp. 218-20) also mentions six different forms of the game that were current in his time (see ii. below). Birūnī (q.v.), in his book on India (tr., I, pp. 183-85), describes an Indian variant of chess played with a pair of dice by four players on an ordinary board eight squares on a side; in his Aṭār (tr. S花纹, pp. 134-36) he treats mathematical aspects of the problem of “the reconfiguration of the chess and its calculation.” Ebn Khāšān also explains this problem in a story about the inventor of chess, supposedly an Indian sage named Šeṣṣa b. Dīber in the time of a certain king Šeṭraš (or Bāḥūt), who asked as his reward that a grain of rice be placed in the first square of a chess board and that the amount then be doubled in each successive square of the sixty-four (Wafṣārāt, Būliaq ed., 1299/1682, II, pp. 328-32; tr. de Slane, III, pp. 69-73). Other Muslim writers attributed the invention of chess to a variety of legendary wise men, usually Indian. Most frequently mentioned is Ḥakīm Ṣināʾa Ṣežša Ṣežša (Joseph, etc.; B. Dāsray/Dāsray al-Hendi (cf. Wieler, p. 89F.). In the form Dāsray (e.g., in Moḥammad b. Ḥabīb-Allāḥ Lājājī (a legendary son of Ṣežša b. Dāsray according to Ṣežša [see above] or a historical person and writer on chess living in Shiraz in the 4th/10th cent., cf. Wieler, p. 80), Ṣežša (cf. Ṣežša); a distortion of Ṣežša?). Mandūdār (the legendary queen Mandoudār, wife of the demon King Rāvaṇa of Laṅka/Ceylon in the Indian Rāmāyaṇa epic), hermes, and the Persian Ablā Bakr Moḥammad b. Yāḥya al-Sūlī (d. ca. 336/941; cf. Ebn Ḥallekān, Būliaq ed., 1299/1682, II, pp. 328-32; tr. de Slane, III, pp. 69-73; and Ebn al-Nadīm, Flügel, pp. 167, 172-73, tr. Dodge, I, pp. 329-31, 341-
42) are mentioned. All these references suggest that chess spread from Persia to the Arabs and other Muslim peoples quite early in the Islamic period and with it the general assumption that the game had originated in India. It subsequently traveled to Byzantium and Europe, where it was already known before the Crusades.

From at least as early as the 6th century C.E., the main form of chess seems to have been played on a board with eight squares on each side and with more or less the same number of pieces and arrangement that are known today. The chessmen are obviously categorized according to the traditional division of the Indian army (as mentioned, e.g., in the Arthasastra); "hamsa-avva-ruha-ruha-padița," that is, elephants, horses, chariots, and foot soldiers, led by the king and his counsellor. The arrangement of the pieces was described in Viśaīīi i eurong; the king (sâh) in the center, the two rooks (roks) on the right and left flanks, the counsellor (fakãh: equivalent to the queen in the European version) beside the king, the elephants (pil) like the royal guards (i.e., in the positions of the European bishops), the horse (aup: in the European version the knight) like the cavalry, and the foot soldiers (padațuk, paeus) in the front line. Ferdowsī (Moscow, VIII, pp. 206-16; ed. Mohl, VI, pp. 193-201) follows this description closely, giving the Persian names of the pieces as sâh, roks (perhaps to be identified with the fabulous bird; cf. also OFr. rok, Eng. rook), dastar, pîl, ush, and pâdațu, but in the immediately following account of the invention of chess by Taʾkand (Moscow, VIII, pp. 217-47; ed. Mohl, pp. 201-23) he mentions a board of 100 (i.e., 10 x 10) squares, with an extra piece in the shape of a camel (editor) on each side, between the elephant and the horse. The counsellor is called farṣānī (wise). These names were borrowed or translated into Arabic, whereas some of them found their way into European languages.

Although the chessmen have remained generally the same, the rules for their movements have undergone change. The most important took place in Spain around the middle of the 15th century, when the queen, which formerly could move only one square at a time diagonally, was given the power to move along the entire board both diagonally and in a straight line. This version of play was called de la dama (in the style of the queen), in contrast to de los jaques (the old style). The modern form of casting (moving both king and rook in a single turn) was not introduced until the beginning of the 17th century. These innovations were then introduced to Persia and the rest of the Muslim world. Despite such alterations, however, the game is won in the same basic way, by sâh/mâr (checkmate). It is generally supposed that mār is the Arabic perfect of the verb "to die," but this seems unlikely since very the point of the story, as told in the Sâh-nâma, is that the King is made powerless and paralyzed without being hit by anybody (cf. Murray, p. 159). Other pieces get killed (NPers. košta) but the King becomes mār (cf. Mo'īn, III, s.v. l-mār; Morgenstierne, p. 48), a word appearing in various Persian languages with the meaning "broken, paralyzed." Furthermore, early usage implies that Arabic al-sâhâmar was a loanword from Persian (cf. Dozy, Supplet, s.v. šah and šahmâr). The term was also adopted in most European languages (e.g., Sp. jaque mate).

The game of chess has long played an integral part in Persian culture. It is mentioned frequently in Persian literature, and almost all the great poets have used it as a metaphor for human strife and the blows of fate (e.g., Mo'ezzi, Sanat, Kayyām, Asâr, Ashâr, Ka'âmi, O'nsor, Sâdî, Hâfiz). On the other hand, some writers, for instance, Kaykâvis b. Eskander, author of Qâhûn-nâma (comp. 547/1152-3), followed theological tradition, warning against indulging in chess and nörd (p. 76). At times the game has been depicted in miniatures, especially those illustrating the introduction of the game to the court of Naples (e.g., two manuscripts of Sâh-nâma, one copied in 73/1330-31 and now in the Topkapi Sarayi, Istanbul, Binyon, pl. XVI-B; and Pers. ms. 9 in the John Rylands Library, Manchester, Robinson, 1980, p. 110, no. 470, now attributed to western India in the Sultaneate period). Occasionally a game of chess appears in illustrations of lyrical poetry, for example, a gâzal by Kâtebi in the British Museum (Add. 16561, dated 873/1468, Robinson, 1957, pl. viii). It should be noted that in these illustrations the chessboard is usually depicted in monochrome (often white), which seems to have been normal for boards at least until the 9th/10th century. Apart from inlaid wood, stone, and other hard materials, chessboards could be made from leather (e.g., red shagreen). The chessmen are usually depicted simply as colored or marked pieces, rather than as sculpted figures, and the game was probably often played with such pieces in the early days. At the same time, however, exquisitely carved chessmen are known to have existed almost as long as the game itself; they were carved from wood, ivory, or stone. Already in Sâh-nâma (Moscow, VIII, p. 245; ed. Mohl, VI, p. 222) the chessboard of Taḵkand is described as made of ebony (fahâš) and the chessmen of teak (sâj) and ivory (fâj).

ii. CHESS TERMINOLOGY

Ağma (Turk. agmacz). Ottoman Turk. aćmaz; also "éva," Arab. a'amawd, the interpolation of a chessman to keep the king out of check.

Ash "knigh" (lit. horse). Ash o farzin nekādan or ash o farzin ta'rikh dādan, the laying aside of one or more pieces (cf. sahar) by the stronger party in order to make the game more even or to express a feeling of superiority.


Dast, round, game (e.g., yuk dast šātrān) "a game of chess.

Dastīr (lit. "minister"). ibid., pp. 210 l. 2701, 246 l. 3331, farzin, farezīna (Pahlavi, Farzī, lit. "a sage"). ibid., p. 246 l. 3339; Birūnī, India, p. 183, wariz "queen." In Great chess farzīna and wariz are two distinct pieces with different moves.

Farzīna, farezīna, see dastīr.

Farzin shātān, the promotion of a pawn when it reaches the end of the board.

Farsīnband, position in which a pawn is protected by the queen in order to block the forward movement of a hostile piece whose only chance of advancing is to take the pawn.

Gārī, gārīhōn (lit. absent, like somebody absent), to play blindfold or without looking at the board (Bland, pp. 24-25).

Gostērās ("deployment.

Haratā "move.

Kūš (lit. commodity), chessman (Bland, p. 46; see mohezā).

Kūsh "square, position" (lit. "house").

Keš, keši, kesh "check" (lit. meaning uncertain; cf. šah).

Koštān, see zadun.

Lār and lār šātān, also pār and pār šātān, when a player is left with a bare king (lit. meaning uncertain).

Mangīnā, chess game, position, or stratagem (now obsolete; also mangīhāvār, mangīhāvāyād).

Mār, see sīvān.

Mōzār "chessman" (lit. "board, marble").

Nār "chessboard;" also known as raqā-ye šahān, rakā-ye šahān, qara-ye šahān, sāzā-ye šahān, karbās-ye šahān, and warqā-ye šahān.

Pār, see lār.

Pāridā, see bārdān.

Pādā-ye azl (lit., the original pawn; Ar., bārdān al-bārdāq), two special pawns, one to each side, in Great chess. They are positioned in front of the father's rook (Bland, pp. 12-13, and pl. 1).

Pāf, fil "bishop" (lit. "elephant").

Pīshīndār, protecting the bishop with two pawns.

Qārūn, qārūn; a box or bag to hold a set of chess; an idiom indicating that the two sides are equal.

Qārīmandar "chess player.

Qārūn āfsanā "castleing" (lit. "going to the castle").

Rok (Arab. rok) "rook." This piece is sometimes made in the shape of a bird rook.

Rāgā, see not.

Šāh "king," see also keš.

Sāhār (sic), interposing a piece between the king and a hostile piece (Bland, p. 57, cf. aīmā). Sāhār (sic), sacrificing a piece to save the king (Bland, p. 57).

Sāh-mat "checkmate," also simply māt (origin uncertain; possibly from Arab. māt "he is dead").

Sāhān, term signifying a drawn game when one player, in order to escape certain checkmate, repeatedly checks his opponent's king. It may also refer to escaping checkmate by sacrificing a number of pieces (Birūnī, quīta), ed. Moīnī, 1, p. 1236; Dehkoldā, s.v.; Bland, pp. 53-57.

Sāh-ruq, when the king and a rook are attacked by the same piece.

Sāhāk "check;"

Sāhān "chess piece" (lit. "on horseback").

Sāhān-mohra battā kardān, allowing the opponent to choose black.

Tābī (lit., arrangement), opening, deployment (now obsolete; see gosṭērās; Bland, pp. 47-49).

Tābī dākān, to give as odds.

Wariz, see dastīr.

Zadun, lit. "to strike, to kill," capturing a chessman from the opponent; also koštān "to kill.

Zānīr "turn" (Arab. lit. "strike") in chess and backgammon.

Types of chess.

Sārānī-ye moraqāz (lit. "patched chess"). Like standard chess, the only difference being that the bishops are placed next to the rooks, instead of the horses.

Sārānī-ye doqī-ye sazān (lit. "chess with castles"). is played with a board with ten by ten squares. The four
corner squares are called ḫeqī ‘castle.’ There are four extra pieces, ḫābbāhā (lit. ‘battering rams’), which move like the bishop (cf. al-ṣāranj al-ṭāmu ‘complete chess,’ in Bland, p. 28). According to Masʿūdī (Morājī VIII, p. 313, ed. Pellat, V. p. 219) the ḫābbāhā moved like the king. The game is played like ʿṣāranj-muqtaqī, but with the difference that the king can be castled provided it is not hindered on the way and there is no promotion of pawns. A variety mentioned in the Sīh-nāma (Moscow, VIII, pp. 245-47) also has ten by ten squares but four ʿṣāranj ‘camels’ positioned between the bishops and knights.

ʿṢāranj-e kāh (great chess) or ʿṣāranj-e kāmēl (complete chess), a more elaborate game, played with 56 men. 28 on each side, on a board with 112 squares (10 x 11 plus one projected square on the right of the second row of each side). Each side consisted of a king, a waṣīr, a ḥurrīn, two garrās (zarrāf), two ḫābbāhā, two advance guards (waṣīr), two bishops, two knights, two camels (līn in Amoll, apparently a misspelling of camel), two rooks, and eleven pawns including a peculiar pawn called the original pawn (ḥalād-dī waṣīr, Ar. ḥalād-dī al-baydān). Chessmen are arranged in three rows (see Bland, pl. II). There are three kinds of moves: straight (maḥṣūm: waṣīr, ḫābbāh, rook), oblique (maḥjūl: ḥurrīn, bishop, waṣīr), and mixed (mahqak: knight, camel, bishop), which pieces use to move one square (waṣīr and ḥurrīn), two squares (ḥābbāh and bishop) or more (rook and waṣīr). The moves of camels and garrās are not clear according to Bolland. Pawns can be promoted, but only to the rank of the piece they belong to except for the original pawn. This pawn, once it reaches the end of the board, can be put back anywhere on the board. Should that happen twice the pawn is called ṣāh-e muqtaqī (false king) and moves as a king (Bland, pp. 11-13, pls. I-II).

Javārceh, a kind of chess that according to Masʿūdī (loc. cit.) was played on a board of seven by eight squares with twelve pieces, six on each side and representing different organs of the human body. The game was invented in the 4th/10th century (ibid.: it is not mentioned by Amoll).

Types of chess more removed from the original comprise the following:

1. A game played with dice and a board with four by sixteen squares. The chessmen were set as in the following diagram. The number of eyes on the dice determined which piece to move (1 = pawn, 2 = rook, 3 = knight, 4 = bishop, 5 = queen, 6 = king). Masʿūdī (loc. cit.) describes a variant of this game in which chessmen are arranged in four rows at the narrow ends of the board, with the pawns in the four inner rows.

2. A game, well known at the time of Amoli, that was played on a circular board, in the middle of which there was a small circle. Once a king was moved to this circle and was left there he could not be checked. Pawns could capture each other when meeting head-on; they could not be promoted. Bishops could meet one another. Masʿūdī (loc. cit.) mentions a round game, which he attributes to Byzantium.

3. Fālakīya, a game played with dice on a round board, on which the squares of inner circle were named after the twelve houses of the zodiac, and those of the outer circle after the five planets (twice), the sun, and the moon. Movements were according to celestial rank, for instance, Saturn (Zohar) moved seven squares, Jupiter (Moṣtafā) six, Mars (Merrik) five, the sun four, Venus (Zohra) three, Mercury (Oṭāra) two, and the moon one. The player who threw the highest number on the die became by placing a piece of his choice from the outer circle in a square of the inner circle. If a piece was moved to a house in which it would be in regression (ḵᵛān-ye rāj) it had to move back the appropriate number of squares. After all the pieces had been moved to the inner circle they were moved back to the outer one. To win the game one had to gather the sun and Jupiter on one's own side and Mars and Saturn on the opponent's. Masʿūdī (Morājī VIII, p. 314, ed. Pellat, loc. cit.) describes a similar game, in which, however, colors also played a role in the movement of the pieces.


(MOJAMMAD DARĪBŠĀDI)

THE CHESTER BEATTY LIBRARY, a collection of manuscripts, printed works, and artifacts, predominantly Oriental, assembled by Alfred Chester Beatty and opened to the public in Dublin in 1954.

i. The library and its founder.
ii. Persian manuscript collection.
iii. Coptic manuscript collection.

i. The library and its founder.

Alfred Chester Beatty (b. New York City, 7 February 1875, d. Monaco, 19 January 1968) was the son of a prosperous banker and stockbroker (Kennedy, p. 22) and was educated at private schools and Princeton University before transferring to Columbia University in New York. In 1898, he became one of the first graduates of the School of Mines (Kennedy, pp. 21-22). He began his career in Colorado, where, after beginning as a laborer, he worked as a mining engineer, manager, and consultant (Kennedy, pp. 22-23). As his career prospered, he worked in many parts of North America and Africa. At the age of thirty-five years, when he was forced to retire from active field work for reasons of health, he was already a very rich man. He was particularly noted for devising techniques for the extraction of copper from low-grade ores (Kennedy, p. 32). His friend Herbert Hoover, a mining engineer who later became president of the United States (1929-33), persuaded Beatty of the advantages of London as a base for worldwide mining operations (Kennedy, p. 26). He settled there and in 1914 launched Selection Trust, the