



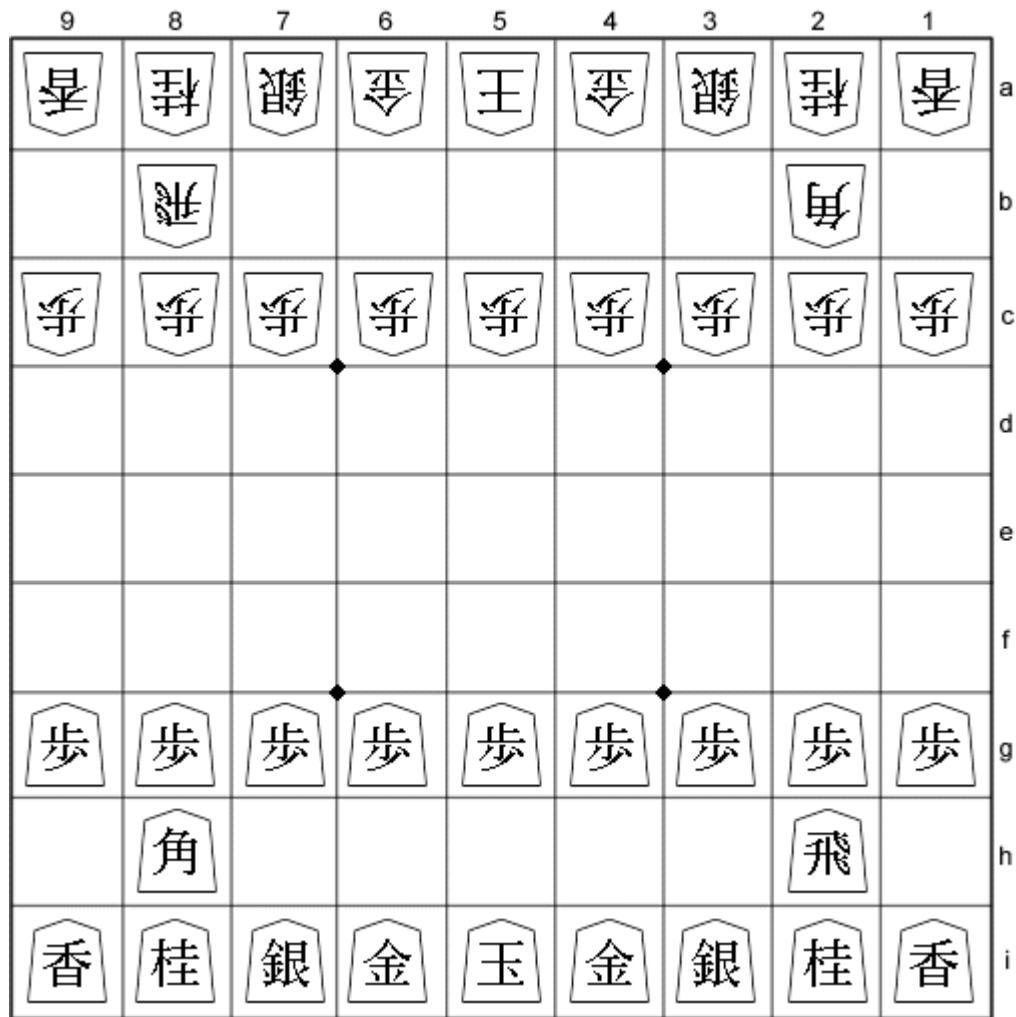
*Flying Chariots & Dragon Kings:
the Chess of Medieval Japan*

Shōgi

The General's Game

THL Niccolò Bartolazzi, C.E.

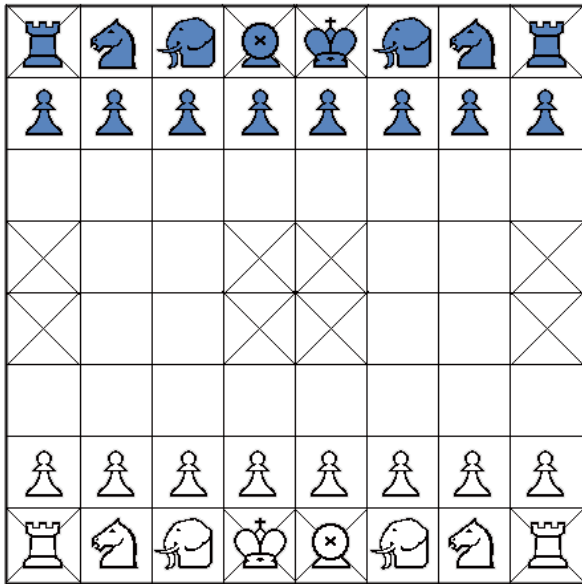
将棋 (*Shōgi*)
General's Game, Japanese Chess



- related to chess games around the world, including western chess (aka international chess)
- considered secondary strategy game to *go*
- played on an unchecked board with two armies of equal size and make-up
- most of the pieces are closely related in movement and meaning to other chess
- object to checkmate opponent “king”
- unique promotion rules
- unique dropping rule of captured pieces

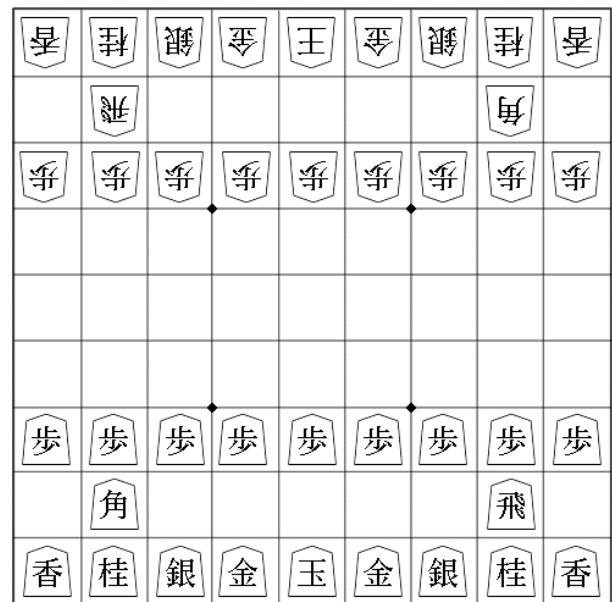
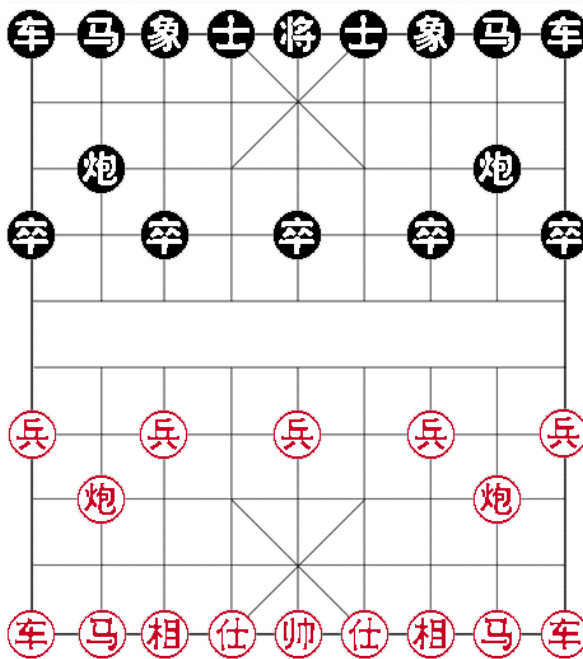
Origins of Chess From Indian *Chaturanga*

- meaning “four-limbed”, describing four parts of the army: cavalry, elephant, chariot, foot
- originated by 6th Century
- a divination or military strategy game
- new pieces played on an *ashtāpada* board for race games
- marks on board decorative or from an earlier game and do not affect gameplay
- eight by eight squares, uncheckered
- sixteen pieces per side including a full rank of eight “pawns”
- pieces intricately carved figurines
- pieces played inside the spaces



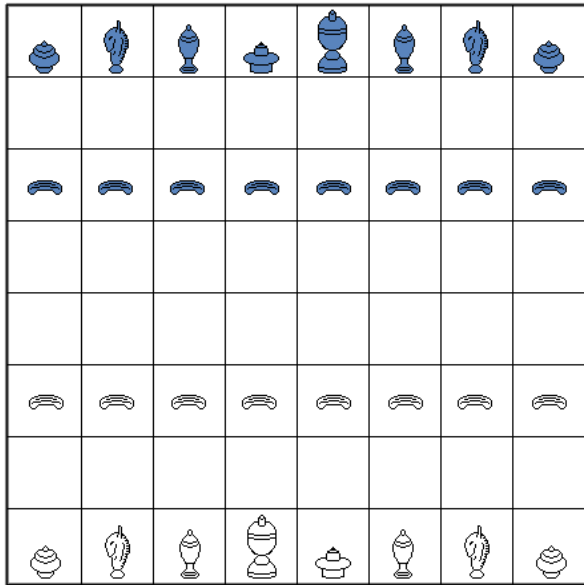
Origins of Chess From Chinese *Xiangqi*

- meaning “figure game”, “elephant game”, or “constellation game”
- first definitive literary references in 6th Century
- earlier references may be this game or other games by the same name and similar board
- a divination, military strategy, or historical reenactment game
- possibly a foreign chess adapted to an existing *xiangqi* board, possibly from a race game
- marks on board represent restrictions for certain piece movements
- various board sizes, often nine lines by ten lines
- sixteen pieces per side, but only five “pawns”
- pieces flat disks with Chinese characters inscribed, differing between each side
- pieces played at the intersection of lines (but not originally)
- trade routes from China through Korea, multiple waves from 8th to 12th Centuries
- two “advisor” companions to “king” piece
- emphasis on forward moving pieces
- lack of powerful “chariot” piece originally
- original *shōgi* board size may have been identical to early *xiangqi* boards
- “general” in place of “king”
- Later Developments
 - *hisha* (“flying chariot”), influenced by re-introduced powerful “chariot” piece in *xiangqi*
 - *kakugyo* (“angle mover”), an original piece developed as a companion to *hisha*



Origins of *Shōgi* From Thai *Makruk*

- trade routes with Thailand (then Siam) before 10th Century
- played on spaces, not points (unlike most Japanese or East Asian games)
- “pawns” begin on third rank (similar in *xiangqi* but closer to *makruk* layout)
- promoting pieces by flipping over
- *ginshō* (“silver general”) has identical moves and position to *makruk*’s *khon*



Unique Rules of *Shōgi* Promotion

Promotion in most chess variants around world:

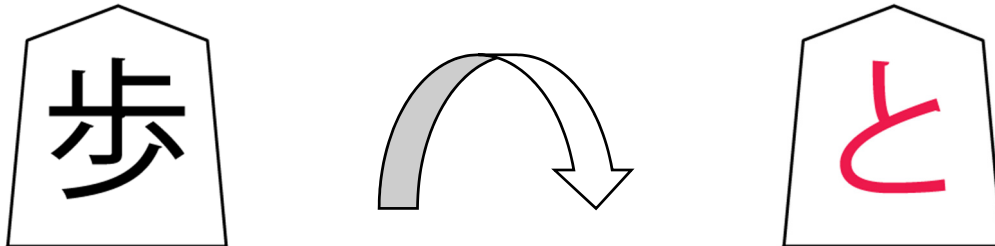
- only “pawns” promote and only upon reaching the final rank (back row of opponent side)
- “pawns” promote into equivalent of “kings companion” piece (i.e. a queen)
- physical piece of “pawn” replaced by a different piece

Promotion in small, medium sized *shōgi* variants:

- nearly all pieces can promote
- permitted by reaching one of the final three ranks (or far third of the board)
- different pieces gain a variety of different, and sometimes brand new, movement rules
- optional unless a piece could no longer move
- accomplished by flipping over piece to reveal different character (value)

Promotion in large sized *shōgi* variants:

- nearly all pieces can promote
- flipping over the piece
- variety of different, sometimes new moves
- no promotion zones
- permitted only when a piece makes a capture
- mandatory upon capture



Unique Rules of *Shōgi* Dropping

Common to most chess variants around world:

- two armies with identical pieces, differing in colors
- captured pieces removed permanently from the game (barring a promoted “pawn”)

Capture and Dropping in *shōgi*:

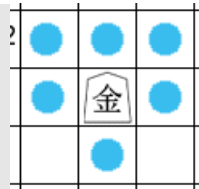
- two armies with identical pieces (save for the “king”) and no difference in color
- point of wedge faces away from controlling player
- captured pieces go into capturing player’s “hand”
- as a turn, a captured piece may be placed on board (no additional movement allowed)
- dropped pieces have original, non-promoted value
- drops in a promotional zone do not promote until they move on a later turn
- always keep visible captured pieces to opponent

Restrictions to Dropping:

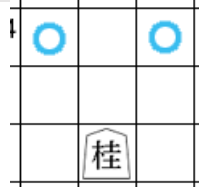
- cannot place a piece that could not move
 - no *fuhyō* or *kyōsha* on final rank
 - no *keima* on final two ranks
- cannot place two *fuhyō* in same file
- dishonorable (and against the rules) to drop a *fuhyō* to checkmate a “king”; may be dropped to cause check and an existing *fuhyō* on the board can move to checkmate
- dropping only introduced in 16th Century and later variants (not present in most large historical variants)

Movement of *Shōgi* Pieces

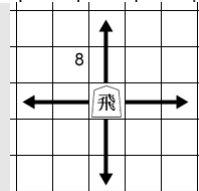
Shōgi variants have hundreds of different pieces. Because of this, the pieces are often categorized by the nature of their movement. Some pieces have more than one category of movement. Unlike most of the pieces in western chess and other variants around the world, the movement of many *shōgi* pieces are not as symmetrical, though they often have a companion piece that mirrors its movement.



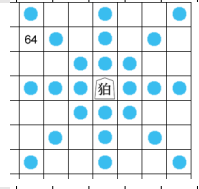
Stepping: moves by stepping to an adjacent space. In regular *shōgi* this is the most common move. In western chess, this is the movement of the king and pawns.



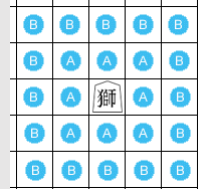
Jumping: moves by jumping to specific spaces. This move is derived from the “horse” (ancestor of the western knight). The intervening spaces can be occupied by pieces. Different pieces will jump to different specific spaces (not all are similar to the knight).



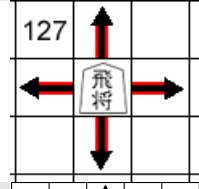
Ranging: moves by sliding any number of unobstructed spaces in certain directions. This move is derived from the “chariot” (ancestor to the western rook). Some ranging pieces will move orthogonally, some diagonally, some both; some will be limited which direction they can range move.



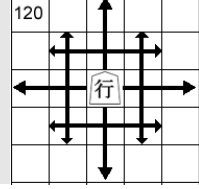
Multiple Stepping: some step-movers can take multiple steps in one turn but the path needs to be clear with no obstructing pieces – it is not a jump or a slide. Some pieces are restricted to continuing in the same direction while others can change directions after each step. If the piece makes a capture, the turn and movement are over regardless of any remaining steps.



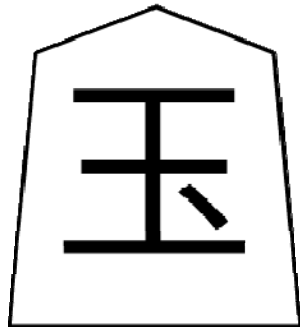
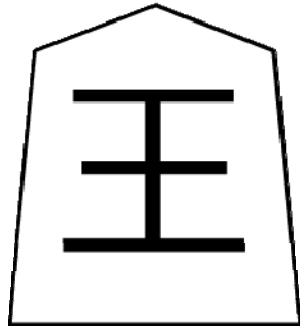
Lion: the origin of this movement comes from the *shishi* (“lion”) and other pieces have full or partial lion movement. The piece can act like a multiple step mover or a jumper, often also being permitted to return to its originating space. Unlike regular step movers, the lion-moves can make multiple captures in one turn.



Range Jumping: the piece moves by sliding any number of unobstructed spaces in certain directions like a range mover. However, when making a capture, a ranger jumper may jump any number of obstructing pieces as long as they are of lower value.

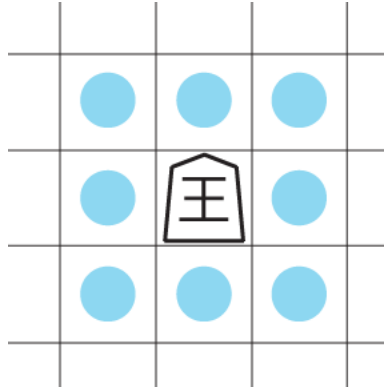


Hook Movers / Hook Ranging: moves like a typical ranging piece but (any number of unobstructed spaces in a direction) but once per movement can take a 90° turn.



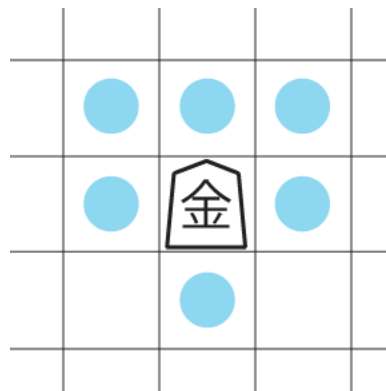
Ōshō (“king general”) & ***Gyokushō*** (“jade general”)

The opposing “king” pieces in *shōgi*. Their rules are nearly identical to western chess, each can take one-step in any of the eight directions, neither can (in the common variants) be intentionally put or left in check, and checkmating the opponent piece brings victory to the other player.



Kinshō (“gold general”)

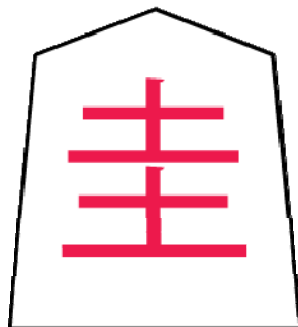
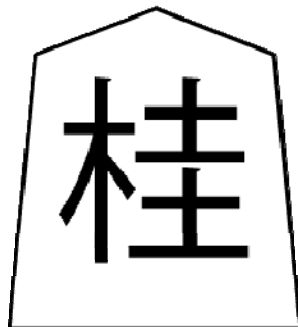
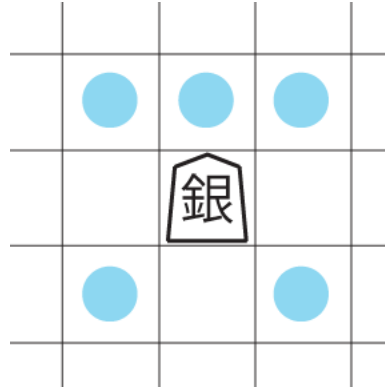
Each player starts the game with two “gold generals” as companion pieces to the “king”. The *kinshō* can take one step in any orthogonal direction or one step in either diagonal forward direction. In regular *shōgi* the *kinshō* do not promote and (considered to be a piece almost as versatile as the “king”) most of the other pieces promote to have *kinshō* movement.





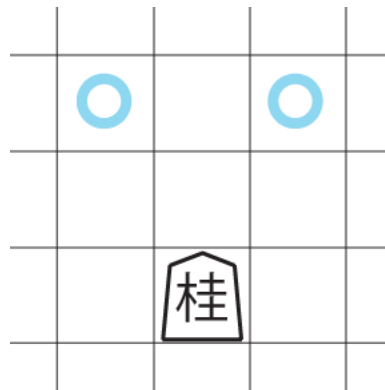
Ginshō (“silver general”)

Each player starts the game with two “silver generals” which stand next to the *kinshō*. The *ginshō* was most likely inspired by the movement of the *khon* in Thai *makruk* (the *khon* inspired by the original “elephant” piece of Indian chess), making it a distant cousin to the western bishop. The *ginshō* can take one step in any diagonal direction or one step in straight forward. The *ginshō* promote into the *narigin* which has the same movement as the *kinshō*.



Keima (“laudable horse”)

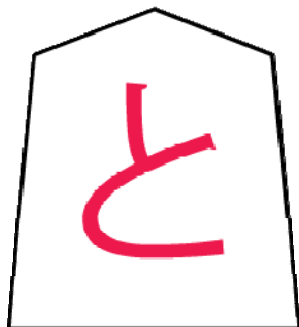
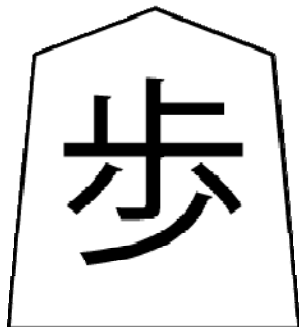
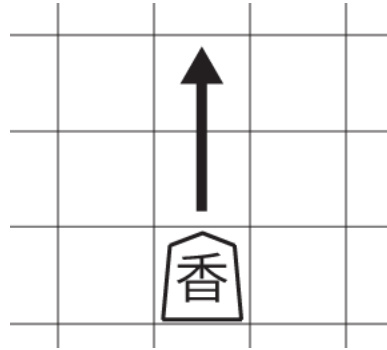
Each player starts the game with two *keima*, serving as the “horse” piece in *shōgi* and a distant cousin to the western knight. The *keima* is also the only piece in regular *shōgi* that can jump over other pieces, like the knight, except it can only move in a forward direction, specifically one space forward and then one space diagonally forward left or right. The *keima* promotes to the *narikei* with the same movement as a *kinshō*. Because the *keima* cannot move backward, they are required to promote when reaching the eighth or ninth rank.





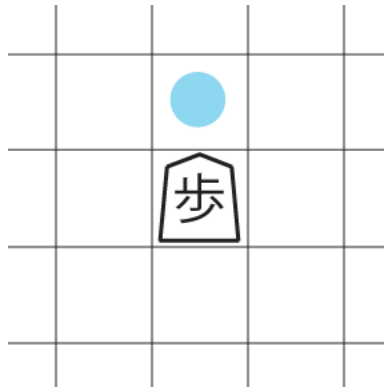
Kyōsha (“fragrant chariot”) or *Yari* (“lance”)

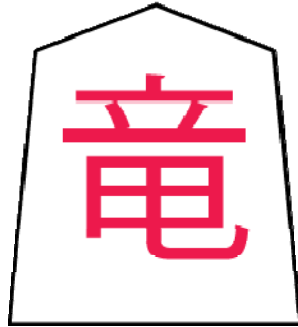
Each player starts the game with two *kyōsha*. This pieces begin in the rear corners of the board, taking the position of the “chariot” piece common to most variants of chess. The *kyōsha* is a descendent of the “chariot” (and thus a distant cousin to the western rook) though from an old and restricted Chinese “chariot” when the original movement was deemed too powerful and unbalanced in the game. The *kyōsha* can move any number of unobstructed spaces but only in the forward direction – hence why it is also called a “lance”. Because of this, the *kyōsha* must promote into a *narikyō* when reaching the final rank and gains a movement identical to the *kinshō*.



Fuhyō (“foot soldier”)

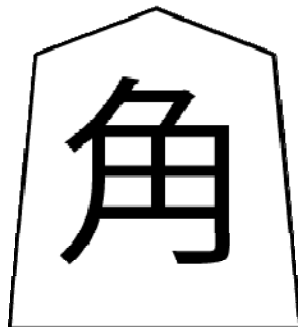
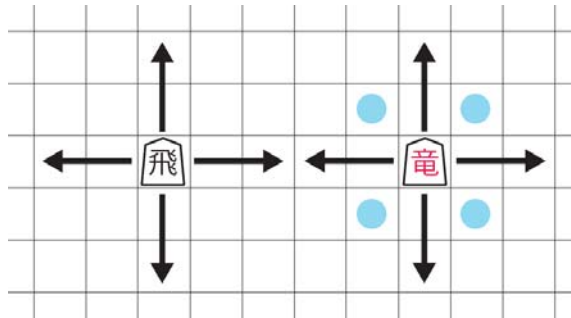
In most *shōgi* variants, each player starts the game with a line of *fuhyō* pawns in front of the major pieces, equal in number to the width of the board, like most forms of chess around the world, though unlike Chinese *xiangqi*. Standard *shōgi* has nine *fuhyō*. The only movement of the *fuhyō* is one step forward, including while capturing. A *fuhyō* promotes to a *tokin* which has the same move as a *kinshō*, making it one of the more versatile pieces in play but having very little value when captured by the opposing player.





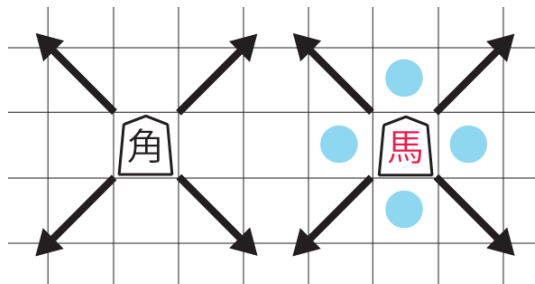
Hisha (“flying chariot”) & Ryūō (“dragon king”)

At some point after *shōgi* had been established, the more powerful version of the “chariot” piece was introduced. The Japanese seemed to have thought this was a new piece and added just one to the existing set-up, placing it the empty row between the major pieces and the “pawns”. The *hisha* has the same move as its distant cousin (*twice removed*) the western rook; any number of unobstructed spaces in the four orthogonal directions. It promotes into the *ryūō*, the most powerful piece in regular *shōgi*. The *ryūō* retains the rook movement but gains the ability to step one space in any diagonal direction – a rook plus a king.



Kakugyō (“angle mover”) & Ryūma (“dragon horse”)

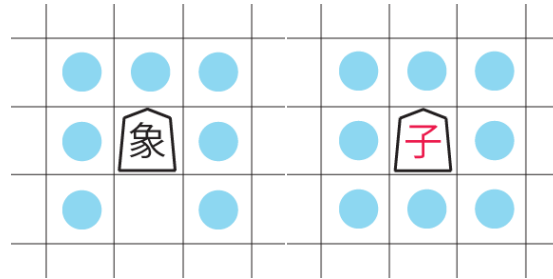
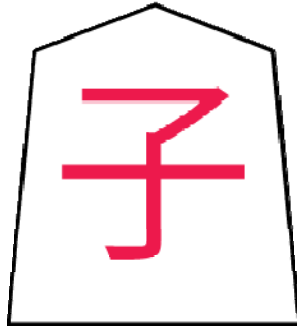
The *kakugyō* is often transliterated as “bishop” in English because of its identical movement; however, it has no relationship to that western piece and its movement was independently invented by the Japanese several centuries before the modern bishop arose in Europe. When the *hisha* was introduced to *shōgi* as a new piece, its diagonal moving equivalent was also added to balance the board. It can move any number of unobstructed spaces in the four diagonal directions. It promotes into the *ryūma* and retains its bishop-like movement but gains the ability to step one space in any orthogonal direction – a bishop plus a king.





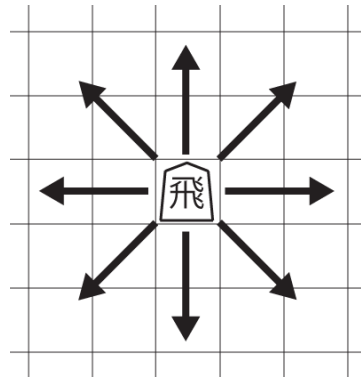
Suizō (“drunk elephant”) & *Taishi* (“crown prince”)

The *suizō* is found in many of the historical *shōgi* variants, including the direct predecessor to modern *shōgi*. Each player has one *suizō*, often starting in front of the “king”. A *suizō* can move one step in any direction except directly backward, giving it nearly as much versatility as the king. A *suizō* promotes into a *taishi* and gains an identical movement to a king. The *taishi* also serves as a second “king” piece and it too must be captured or mated for the game to end. When a player has both a “king” and a *taishi*, both can be put into check and even captured as a regular piece. Removing the *taishi* from the game was probably required when the “dropping” of captured pieces rules put into effect.



Honnō (“free king”)

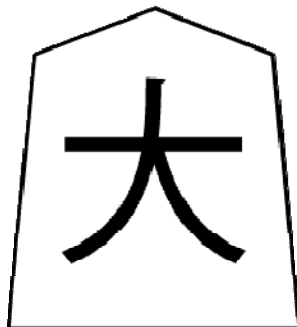
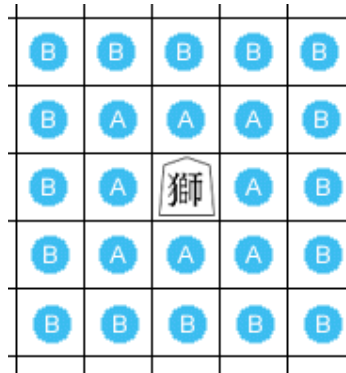
The *honnō* can move any number of unobstructed spaces in all eight directions. This gives it the same move as the modern “queen” of western chess, however this piece was invented independently, several centuries earlier, its name implying it has the movements of a “king” piece but as a range mover. Humorously, in most *shōgi* games where the *honnō* is present, it is often *not* the most powerful piece on the board.





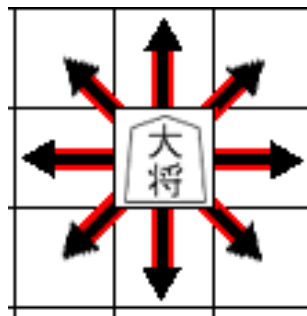
Shishi (“lion”)

The *shishi* is a very powerful piece and very unique to *shōgi* and its variants. The *shishi* can step to any of the surrounding eight spaces (“A” spaces) or can jump to any of the sixteen surrounding those (“B” spaces). It can step to an “A” and return to the space it began the turn on (a move called *jitto*) effectively passing for the turn. It may capture a piece on an “A” and then end the turn, return to the starting space (a move called *igui*, capturing without moving), or step to any adjacent space – and it may capture a second piece on this same turn. Some larger *shōgi* variants have other pieces that include *shishi* like movement.



Taishō (“great general”)

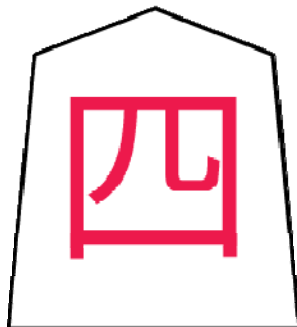
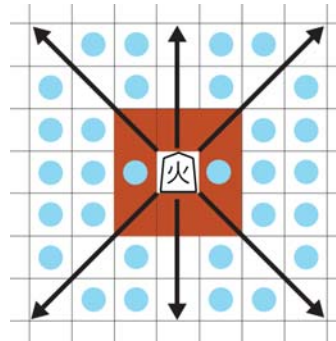
The *taishō* originated in the “exotic” variant of *tenjiku shōgi* and is a good example of a range-jumping piece, being the highest valued and most powerful of that type. The *taishō* moves like the western queen, any number of spaces in any of the eight directions. Like all range-jumpers, the *taishō* can leap over any number of pieces and spaces when making a capture (it cannot jump when moving passively). Range-jumpers cannot jump over pieces of higher or equivalent rank; the *taishō* can leap over any piece except a “king”, “crown prince”, or another “great general”. The other range-jumpers in rank are: *fukushō* (“vice-general”), followed by *hishō* (“flying general”) and *kakushō* (“angle general”) at equivalent value.





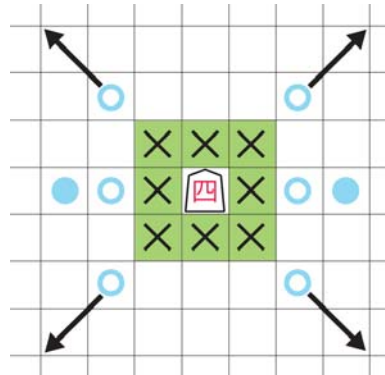
Hiki (“fire demon”)

The *hiki* originated in the “exotic” variant of *tenjiku shōgi* and is one of the strongest, most unique, and highest destructive power of almost any chess piece in history. First, it may move any number of unobstructed spaces in any direction except sideways. It may also move as three step area mover meaning it can reach any of the forty-eight spaces in the three rings around itself unless it would need to jump to do so. However, its most powerful feature is what gives the “fire demon” its name – the ability to burn any opponent piece on any of the eight spaces surrounding itself. Counting a normal capture, a *hiki* could remove up to eight pieces on one turn. This burning power is active even on the opponent’s turn so any opponent piece that stops on one of the eight adjacent spaces is burned and removed from the game. A *hiki* has to stop on the occupying space of another *hiki* to capture it – the attacking *hiki* would be burnt if it stopped on an adjacent square while the attacked *hiki* would be unaffected. Any piece may move or jump through the fire-area of a *hiki* as long as it does not stop.



Shitennō (“four heavenly tetrarchs”) or Yoken

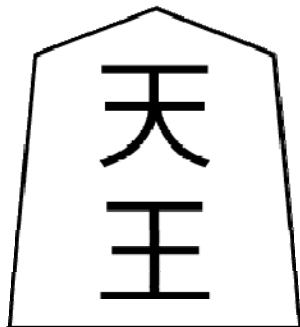
The *shitennō* originated in the “exotic” variant of *tenjiku shōgi* and only appear as promoted piece. It is the only piece in *shōgi* (and not common in any variant) that cannot move to any of the adjacent eight spaces, however it can *igui* capture (capture without moving) an opponent piece on an adjacent square. It can move by jumping to the second square in any direction but left and right and then moving any number of unobstructed spaces from that square; or it can jump to the second square to the left or right and then take one more step in that direction. Some western sources do not indicate the forward and backward ranging movement.





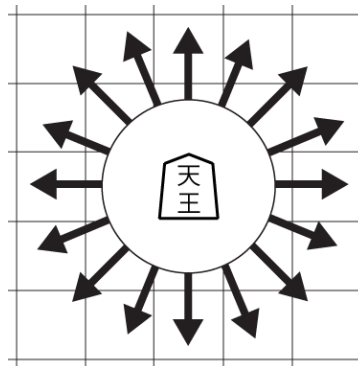
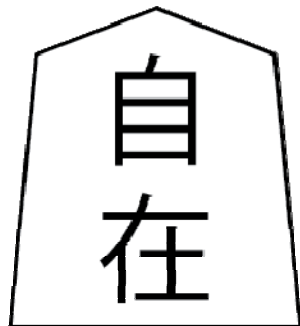
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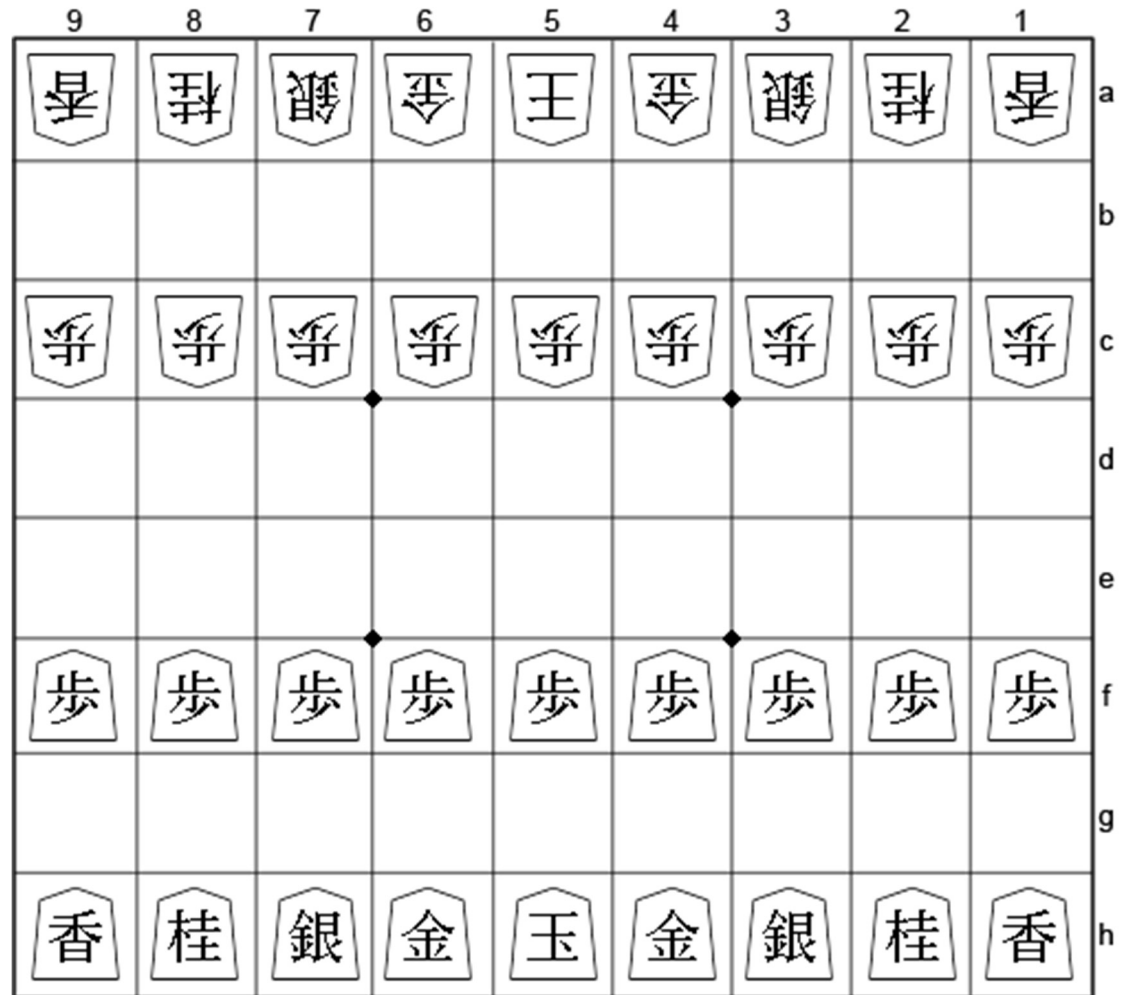
Tennō & Jizai (“Emperor”)

What’s more powerful than a king? The emperor! The *tennō* and *jizai* (a different name for each side but the same rules) have one of the most powerful movements in any chess variant: the ability to teleport. The emperor can move to *any* square on the board in one move. However, it is heavily limited in its use. It cannot move to a space occupied by a piece on its own side of course, but it can only make a capture of an opponent piece if that piece is not protected by another, because the emperor cannot put itself into check. While both sides have an emperor in play, both are limited because the emperor can protect all of its army.



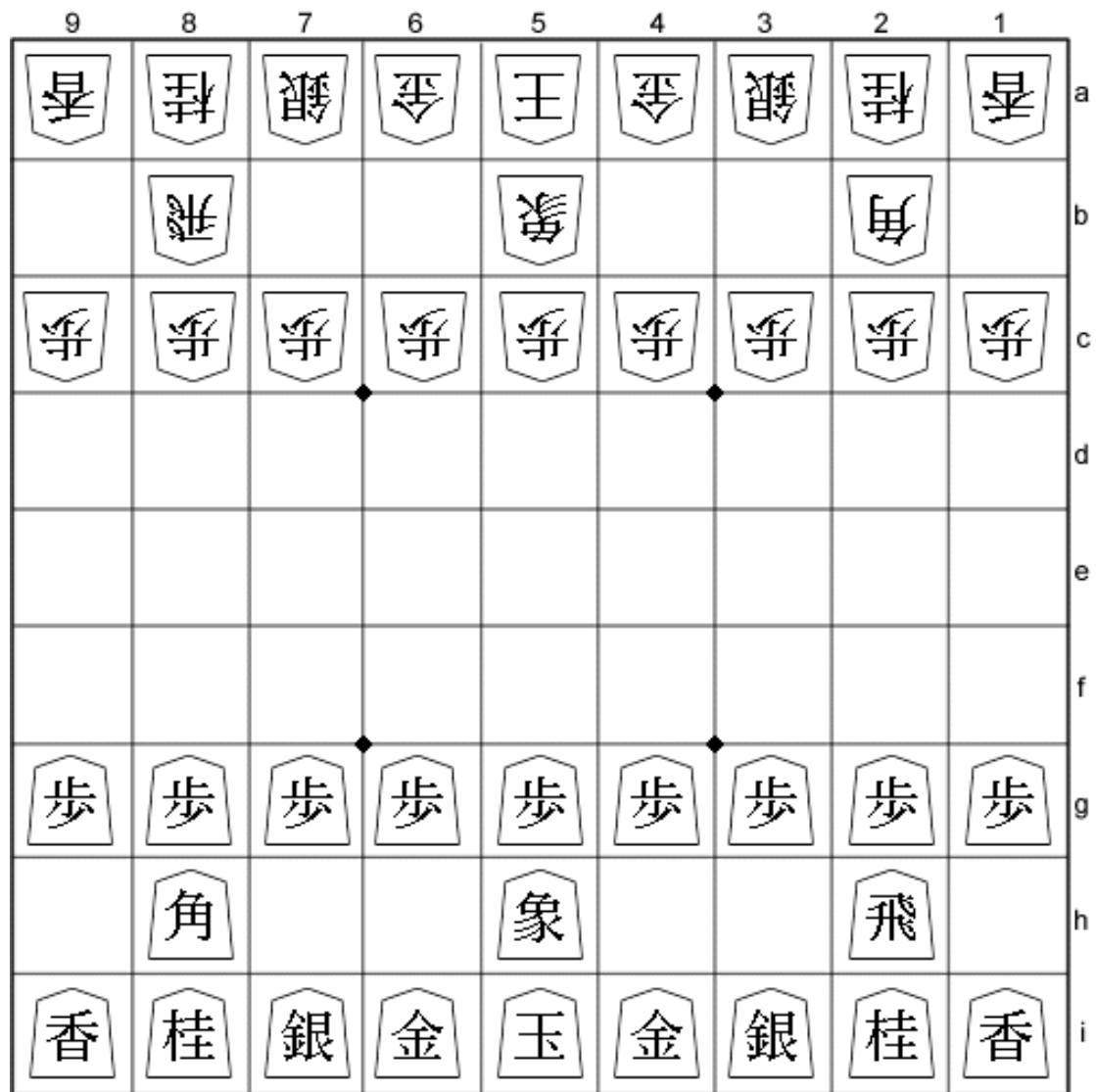
平安将棋

Heian Shōgi - Heian Era Chess



小将棋

Shō Shōgi - Small Chess



中将棋

Chū Shōgi - Middle Chess

12	11	10	9	8	7	6	5	4	3	2	1	
香	豹	銅	銀	金	象	王	金	銀	銅	豹	香	a
反		角		虎	鳳	麒麟	虎		角		反	b
橫	堅	飛	馬	竜	奔王	獅	竜	馬	飛	堅	橫	c
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	d
			仲					仲				e
												f
												g
			仲					仲				h
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	i
橫	堅	飛	馬	竜	獅	奔王	竜	馬	飛	堅	橫	j
反		角		虎	麒麟	鳳	虎		角		反	k
香	豹	銅	銀	金	玉	象	金	銀	銅	豹	香	l

天竺将棋

Tenjiki Shōgi - Exotic Chess

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
香	桂	豹	鉄	銅	銀	金	象	王	金	銀	銅	鉄	豹	桂	香	a
反		車	車		虎	鳳	獅	獅	虎		車	車		反	b	
横	豎	角	馬	竜	水	火	奔	獅	火	水	竜	馬	角	豎	横	c
横	豎	飛	鷹	鷲	角	將	副	大	飛	角	鷲	鷹	飛	豎	横	d
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	e
				犬							犬				f	
															g	
															h	
															i	
															j	
															k	
				犬							犬					
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	l
横	豎	飛	鷹	鷲	角	將	副	大	飛	角	鷲	鷹	飛	豎	横	m
横	豎	角	馬	竜	水	火	獅	奔	火	水	竜	馬	角	豎	横	n
反		車	車		虎	麒麟	獅	奔	鳳	虎		車	車		反	o
香	桂	豹	鉄	銅	銀	金	玉	象	金	銀	銅	鉄	豹	桂	香	p

大将棋

Dai Shōgi - Large Chess

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
香	桂	石	鉄	銅	銀	金	王	金	銀	銅	鉄	石	桂	香	a
反		猫		豹		虎	象	虎		豹		猫		反	b
	猛牛		猪		狼	鳳	獅	麒麟	狼		猪		猛牛		c
飛	龍	横	堅	角	馬	竜	奔王	竜	馬	角	堅	横	龍	飛	d
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	e
				仲						仲					f
															g
															h
															i
				仲						仲					j
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	k
飛	龍	横	堅	角	馬	竜	奔王	竜	馬	角	堅	横	龍	飛	l
	猛牛		猪		狼	麒麟	獅	鳳	狼		猪		猛牛		m
反		猫		豹		虎	象	虎		豹		猫		反	n
香	桂	石	鉄	銅	銀	金	玉	金	銀	銅	鉄	石	桂	香	o

摩訶大大將棋

Maka Dai Dai Shōgi – Ultra Huge Chess

19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
香	土	石	瓦	鉄	銅	銀	金	無	王	提	金	銀	銅	鉄	瓦	石	土	香	a
反		猫		猿		臥	豹	虎	象	虎	豹	蛇		淮		猫		反	b
	鼠		猪		盲熊		狼	鳳	獅	麒麟	狼		盲熊		猪		鼠		c
驢		桂		猛牛		龍	又	剛	豹	力	羅	龍		猛牛		桂		驢	d
飛	左車	横	横飛	堅	角	馬	竜	行	奔王	摩	竜	馬	角	堅	横飛	横	左車	飛	e
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	f
					仲									仲					g
																			h
																			i
																			j
																			k
																			l
					仲									仲					m
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	n
飛	左車	横	横飛	堅	角	馬	竜	摩	奔王	行	竜	馬	角	堅	横飛	横	右車	飛	o
驢		桂		猛牛		龍	羅	力	豹	剛	又	龍		猛牛		桂		驢	p
	鼠		猪		盲熊		狼	麒麟	獅	鳳	狼		盲熊		猪		鼠		q
反		猫		淮		蛇	豹	虎	象	虎	豹	臥		猿		猫		反	r
香	土	石	瓦	鉄	銅	銀	金	提	玉	無	金	銀	銅	鉄	瓦	石	土	香	s

泰将棋

Tai Shōgi - Grand Chess

25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
香	白虎	鯨	龍	天	鳩	飛	馬	竜	王	金	無	王	金	提	王	王	竜	馬	飛	鳩	天	龍	玄	香	a	
反	横電	鷲	桂	毒	漠	角	猛	白	鬼	銀	左	子	右	銀	鬼	白	猛	角	漠	毒	桂	鷲	横電	反	b	
走	駒	羊	猛	猫	盲	熊	金	盲	虎	叉	剛	近	力	羅	虎	盲	金	熊	猫	羊	駒	走		c		
兵	水	豹	西	東	淮	鷹	猿	鳥	孔	翅	鳳	獅	大	麟	孔	古	猿	鷹	淮	東	西	豹	水	兵	d	
左	青	木	土	石	瓦	鉄	銅	鼠	蛇	臥	象	行	臥	摩	象	行	鼠	鉄	銅	瓦	石	木	青	左	e	
哮	麒麟	狸	驢	牛	横	堅	猛	前	鹿	猪	狼	狼	猪	鹿	前	猛	堅	横	牛	驢	狸	哮		f		
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	g
							仲										仲								h	
																									i	
																									j	
																									k	
																									l	
																									m	
																									n	
																									o	
																									p	
																									q	
																									r	
歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	歩	s
哮	麒麟	狸	驢	牛	横	堅	猛	前	鹿	猪	狼	狼	猪	鹿	前	猛	堅	横	牛	驢	狸	哮		t		
左	青	木	土	石	瓦	鉄	銅	鼠	蛇	臥	摩	象	行	臥	蛇	鼠	鉄	銅	瓦	石	土	木	青	右	車	u
兵	水	豹	西	東	淮	鷹	猿	鳥	孔	大	麟	獅	鳳	翅	孔	鳥	猿	鷹	淮	南	北	豹	水	兵	王	v
走	駒	羊	猛	猫	盲	熊	金	盲	虎	羅	力	近	剛	叉	虎	盲	金	熊	猫	羊	駒	走			w	
反	横電	鷲	桂	毒	漠	角	猛	白	鬼	銀	左	子	右	銀	鬼	白	猛	角	漠	毒	桂	鷲	横電	反	x	
香	玄	鯨	龍	天	鳩	飛	馬	竜	王	金	提	王	無	金	王	竜	馬	飛	鳩	天	龍	鯨	白	香	y	

References on *Shōgi* Pieces

- Adams, Colin. *Struggle for Survival*. (Tenjiku Shogi) Web book - <http://www.colina.demon.co.uk/tenjiku.pdf>
- Botermans, Jack, Tony Burret, Peter van Delft, & Carl van Splunteren. *World of Games, The*. Facts On File, New York, NY, 1989.
- Cazaux, J. L. *History of Chess*. Web document - <http://www.chez.com/cazaux/history.htm>
- Evans, Steve. *Shogi Variants Version 1.55a*. Shogi variant software. <http://www.netspace.net.au/~trout/index.html> (no longer online)
- Hodges, George. *Great Shogi Games and How to Play Them, The*. Shogi Association, Bromley, KY, 1978.
- Hooper, David & Kenneth Whyld. *Oxford Companion to Chess: Second Edition, The*. Oxford University Press, Oxford, UK, 1992.
- Howe, David & Hans Bodlaender (editors). *Chess Variants Page, The*. Web document - <http://www.chessvariants.com/>
- Murray, H. J. R. *History of Chess, A*. Clarendon Press, Oxford, UK, 1913.
- Pritchard, David Brine. *Encyclopedia of Chess Variants, The*. Games & Puzzles, Godalming, 1994.

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