# Ancient Chinese constellations

# Junjun Xu

Beijing University of Aeronautics and Astronautics Room 424, Apartment 20, No. 37 Xueyuan Street, Beijing, China email: xjjhhyy@sina.com

**Abstract.** China, a country with a long history and a specific culture, has also a long and specific astronomy. Ancient Chinese astronomers observed the stars, named and distributed them into constellations in a very specific way, which is quite different from the current one. Around the Zodiac, stars are divided into four big regions corresponding with the four orientations, and each is related to a totem, either the Azure Dragon, the Vermilion Bird, the White Tiger or the Murky Warrior. We present a general pattern of the ancient Chinese constellations, including the four totems, their stars and their names.

Keywords. China, constellations, mansions

## 1. Introduction

Three enclosures, four symbols and twenty-eight mansions characterise the ancient Chinese constellations. This division of the starry sky began to appear in China before the Zhou and Qin dynasties. The three enclosures refer to three areas around the North celestial pole: the Purple Forbidden enclosure, the Supreme Palace enclosure and the Heavenly Market enclosure. The four symbols are distributed near the ecliptic Zodiac and the lunar orbit and are represented by four totems: the Azure Dragon of the East, the Vermillion Bird of the South, the White Tiger of the West and the Black Tortoise of the North. Every symbol was divided into seven sections which were know as mansions. There are twenty eight mansions in this system and the Moon goes through approximately a mansion every day, reflecting the lunar month. The twenty eight mansions<sup>†</sup> were named Horn, Dipper, Legs, Well, Neck, Ox, Bond, Ghosts, Root, Girl, Stomach, Willow, Room, Emptiness, Hairy head, Star, Heart, Rooftop, Net, Extended net, Tail, Encampment, Turtle beak, Wings, Winnowing-basket, Wall, Three stars, Chariot, as show in Fig. 1.

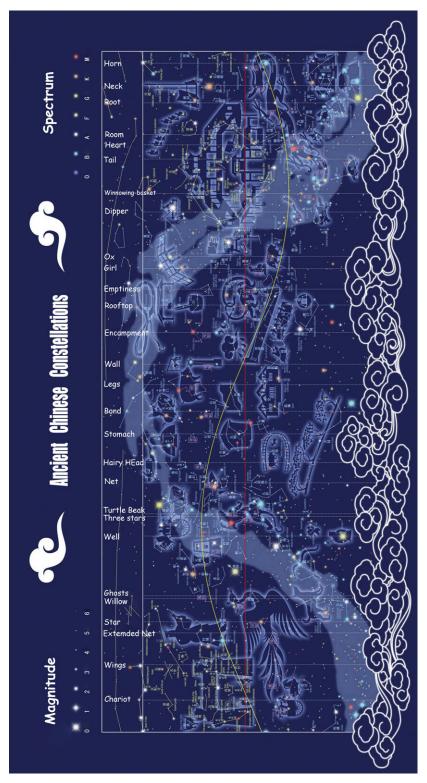
#### 2. Tables of star names

The following tables are a comparison list of star names both in traditional Chinese characters and in English. They are classified in seven tables according to the three enclosures and the four animal images which they belong to<sup>‡</sup>.

## 3. Implications

Ancient Chinese astronomy has taken an important rôle in both the Chinese culture and the world astronomical culture. Chinese ancestors divided the constellations and denominated the stars in a quite different way as the Greeks did. It will be an interesting

† see also http://baike.baidu.com/view/17723.htm?fr=ala0\_1\_1 ‡ http://www.lcsd.gov.hk/CE/Museum/Space/Research/StarName/c\_research\_ chinengstarzone\_b.htm J. Xu



 ${\bf Figure \ 1.}$  Ancient Chinese constellations. Artwork by Zuojing Guanxing.

$\pm \Delta$ Northern pole $\ensuremath{\belowdist}$ $\belowdi$	紫微垣 Purple Forbidden Enclosure								
$\bullet$ Emperor $\psi \varphi$ Second premier $\psi R$ Second chief judge $A$ Prime minister $\hat{\kappa}$ Son of Concu- $\mathcal{L}$ First minister $\mathcal{L}$ First minister $\mathcal{L}$ $\mathcal{R}$ Judge for nobility $\hat{\chi}$ Son of Concu- $\mathcal{L}$ $\mathcal{L}$ First minister $\mathcal{L}$ $\mathcal{R}$ Judge for nobility $\hat{\chi}$ Imperial Concubine $\mathcal{L}$ $\mathcal{H}$ First minister $\mathcal{L}$ </td <td>北極</td> <td>Northern pole</td> <td>索 紫 彻</td> <td>t左垣 Left wall</td> <td></td> <td>紫微右垣〕</td> <td>Right V</td> <td>Wall</td>	北極	Northern pole	索 紫 彻	t左垣 Left wall		紫微右垣〕	Right V	Wall	
$\mathbb{A}$ $A$	太子	Crown prince	左樞	Left pivot	右樞	Right pivot	三公		
bineobility後密 Concubine少粥Second minister少粥Second ministerな形 Surd of the Surd天經 Celestial pivot上衛 SurdFirst imperial guard上衛 SurdFirst imperial guard太平Royals四輔 Four Advisors Off Four Advisors少術 Second Imperial guard上衛 Second imperial guard大常Celestial pivon大学Celestial pivon大都 Curved Array of Heaven少米 Second premier First minister上公 KaFirst prime minister大部Celestial Great Cone大部 Celestial Great Cone大部Administrative centre大粒 Celestial Pillar上9 First minister大乙 KaFirst Great one内略 Inner stepsInner steps秋本 Waiting少邪 Second premieri guard大七 KaFirst Great one内倍 Inner stepsInner steps秋本 Waiting少邪 Second minister大乙 KaFirst Great one内倍 Inner stepsInner steps秋本 Madis-in- waiting少邪 Second prime minister大七 KaNorthern dipper (Administer)人谷 Celestial finding大本 大本 Second prime minister大米 Second prime minister大米 KaCelestial prime (Administer)人谷 KaCelestial (Administer)大本 大本 大 Second prime minister大米 Second prime minister大米 KaCelestial prime (Administer)人谷 KaCelestial (Administer)大本 大本 大本 Second prime minister大米 KaCelestial prime (Administer	帝	Emperor	少宰	Second premier	少尉		相	Prime minister	
複密 Concubine少粥Second minister少粥Second minister守Guard of the Sun天趣Celestial pivot上衛First imperial guard上第First imperial guard太學Royals四潮Four Advisors少衛Second Iprime guard少衛Second imperial guard大學Celestial privot內陳Curved Array少麥Second prime minister上多First prime minister夢Lunch大常Great Emperor of Heaven少零Second premier minister大乙Celestial Great Cone文母Administrative centre天柱Celestial Pillar上努First minister大乙Frist Great one內骨Inner steps秋Maids-in- waiting少勞Second Imperial guard九米Northern dipper八穀Cillation of centre秋生Official of royal archives少労Second Imperial guard大老Celestial Pillar大母Celestial Pillar大車Official of royal archives少労Second Imperial guard大母Celestial pillation大母Celestial fillation大車Chief judgeIIIIIIIII大車NaideSighting-tubeIIIIII大車Chief judgeIIIIIII大車Sighting-tubeIIIIII大車Sighting-tubeIIIII	庶子		上弼	First minister	上輔	First minister	天理		
回關guardguardguard四關Four Advisors少衛Second Imperial guard少衛Second imperial guard大常Celestial prison句陳Curved Array少多Second prime minister上多First prime minister夢Eunuch大常Great Emperor of Heaven少寧Second premier First minister大こCelestial Great One文島Administrative centre天柱Celestial Pillar上毎First minister太乙Frist Great one内暗Inner steps御女Maids-in- waiting少勞Second minister内海Inner kitchen三節Three top instructors女Female protocol上衛First imperial guard北斗Northern dipper jace八穀Celestial centre村本Official of royal archives少衛Second prime guard天極Celestial pivoto倚倉Guest house大車Official of royal archives少衛Second prime guard天極Celestial pivoto侍倉Guest house大車Official of royal archives少衛Second prime guard天極Celestial pivoto長極Celestial fail centre大車Official of royal archives少希Second prime guard天極Celestial pivot大極Celestial sitalCelestial fail centre大車Official of royal archives少希Second prime guard天極Celestial bial sighting-tube天極Celestial sitalCelestial fail centre大車Chie	後宮		少弼	Second minister	少輔	Second minister			
如陳guardguardguard如陳Curved Array少麥Second prime minister上委First prime minister夢Eunuch大章Great Emperor of Heaven少寧Second premier First minister天乙Celestial Great One文昌Administrative centre大種Celestial Pillar上努First minister太乙Frist Great one内暗Inner steps御女Maids-in- waiting少勞Second minister內房Inner kitchen三師Three top instructors女史Female protocol上衛First imperial guard兆斗Northern dipper jade八穀Eight kinds of crops大建Official of royal archives少衛Second Imperial guard天梅Celestial pivot  Guest house黄糖Royal secretary少麥Second prime minister天様Celestial rotating pearl天梅Celestial shining pearl First Celestial fial大理Chief judgeIII「大樟Celestial balanceIII大理Sit JiaIIIIIIIII大事Interior seats of free emperorsIIIIIII本Canopy of the emperorIIIIIIII本Interior seats of free emperorsIIIIIIII本Interior seats of free emperorsI	天樞	Celestial pivot	上衛		上衛		太尊	Royals	
ministerministerminister大常 cfHeaven少字 ofHeavenSecond premier yee天乙 celestial Great One文目 xel xel perturbed文目 xel centre大社Celestial Pillar上級 First minister大乙Frist Great one New内倍Inner steps御女 waiting少弼 waitingSecond minister guard内廚 小配Inner kitchen instructors三師 xel crops二印 restores女史 archives小衛 second minister大小 guard大小 guardNorthern dipper jade八穀 kelstial pivot小穀 kelstial stinds of crops大康 kelstial bed xel小家 Second prime minister天祿 kelstial pivot任용 kelstial pivot長祿 kelstial pivot人穀 kelstial fial kitchen大康 kelstial bed xel少丞 second prime minister天祿 kelstial pivot大용 kelstial pivot大용 kelstial pivot人穀 kelstial fial kitchen大康 kelstial bed xel小家 second prime minister天祿 kelstial balance人田 kelstial balance<	四輔	Four Advisors	少衛		少衛	_	天牢	Celestial prison	
大帝 of HeavenCreat Emperor of Heaven少学 Second premier天乙 Celestial Great OneCelestial Great One文昌 Administrative centre天柱Celestial Pillar上弼First minister太乙Frist Great one內階Inner steps御女 waiting//>Willing//>Willing//>WillingSecond minister內廚Inner kitchen三師「Three top instructors女史 Female protocol上衛 First imperial guard北斗Northern dipper八穀 istructorsCelestial pivot/信林史 official of royal archives少衛 Second Imperial guard天極 isterCelestial pivot/大康 大康Celestial of royal archives少衛 Second prime minister天極 isterCelestial pivot大康 大理 Chief judge//>Cone「天極 ist isticCelestial shining pearl </td <td>勾陳</td> <td>Curved Array</td> <td>少丞</td> <td></td> <td>上丞</td> <td></td> <td>勢</td> <td>Eunuch</td>	勾陳	Curved Array	少丞		上丞		勢	Eunuch	
御女 Maids-in- waiting少弼 Second minister內廚Inner kitchen三師 Three top instructors女史 Female protocol上衛First imperial guard北斗Northern dipper八穀Eight kinds of crops桂史 Official of royal archives少衛Second Imperial guard天樞Celestial pivot傳會Guest house尚書Royal secretary少丞Second prime minister天璇Celestial rotating jade天廚Celestial kitchen天康Celestial bed天機Celestial shining pearl天梧Celestial flail大理Chief judge系衛Jade六甲Six Jia開陽Opener of heat五帝 内慮five emperorsAssistant筆蓋Canopy of the emperorAssistant		1	少宰	Second premier	天乙		文昌		
waitinginstructors女史Female protocol上衛First imperial guard北斗Northern dipper八穀Eight kinds of crops桂史Official of royal archives少衛Second Imperial guard天樞Celestial pivot僔會Guest house尚書Royal secretary少丞Second prime minister天璇Celestial rotating jade天廚Celestial kitchen天康Celestial bedKCelestial shining pearl天梎Celestial flail kitchen大理Chief judge </td <td>天柱</td> <td>Celestial Pillar</td> <td>上弼</td> <td>First minister</td> <td>太乙</td> <td>Frist Great one</td> <td>内階</td> <td>Inner steps</td>	天柱	Celestial Pillar	上弼	First minister	太乙	Frist Great one	内階	Inner steps	
柱史 achivesOfficial of royal guard少衡 Second Imperial guard天極 Celestial pivot傳會 Guest house尚書 Royal secretary少麥 Second prime minister天璇 Celestial rotating jade天廚 Celestial shining pearl天廚 Celestial flail天康 Celestial bed「「大徳 Celestial balanceCelestial flail大理 Chief judgeK權 Celestial balance大理 K德 Diden virtue </td <td>御女</td> <td></td> <td>少弼</td> <td>Second minister</td> <td>内廚</td> <td>Inner kitchen</td> <td>三師</td> <td>-</td>	御女		少弼	Second minister	内廚	Inner kitchen	三師	-	
archivesguard尚書Royal secretary少丞Second prime minister天璇Celestial rotating jade天廚Celestial kitchen天康Celestial bed天機Celestial shining pearl天梧Celestial flail大理Chief judge天權Celestial balance大理Chief judge </td <td>女史</td> <td>Female protocol</td> <td>上衛</td> <td></td> <td>北斗</td> <td>Northern dipper</td> <td>八穀</td> <td></td>	女史	Female protocol	上衛		北斗	Northern dipper	八穀		
ministerjadekitchen天床 Celestial bed天機 Celestial shining pearl天棺 Celestial flail大理 Chief judge天權 Celestial balance床裡 Chief judge天權 Celestial balance陰德 Hidden virtue玉衡 Jade sighting-tube六甲 Six Jia阴陽 Opener of heat五帝 five emperors搖光 Twinkling brilliance華蓋 Canopy of the emperor	柱史		少衛		天樞	Celestial pivot	傳舍	Guest house	
大理Chief judge反權Celestial balance法理Chief judge天權Celestial balance陰德Hidden virtue玉衡Jade sighting-tube六甲Six Jia開陽Opener of heat五帝内座Interior seats of five emperors搖光Twinkling brilliance華蓋Canopy of the emperor輔Assistant	尚書	Royal secretary	少丞		天璇		天廚		
陰德     Hidden virtue     玉衡     Jade sighting-tube       六甲     Six Jia     開陽     Opener of heat       五帝     Interior seats of five emperors     搖光     Twinkling brilliance       華蓋     Canopy of the emperor     輔     Assistant	天床	Celestial bed			天機		天棓	Celestial flail	
六甲 Six Jia     開陽 Opener of heat       五帝 內座 Interior seats of five emperors     搖光 Twinkling brilliance       華蓋 Canopy of the emperor     輔 Assistant	大理	Chief judge			天權	Celestial balance			
五帝 內座 Interior seats of five emperors     搖光 Twinkling brilliance       華蓋 Canopy of the emperor     輔 Assistant	陰德	Hidden virtue			玉衡				
内座 Interior seats of five emperors     搖光 Twinkling brilliance       筆蓋 Canopy of the emperor     輔 Assistant	六甲	Six Jia			開陽	Opener of heat			
emperor					摇光	•			
杠 CanopySupport   玄戈 Sombre lance	茟蓋	- •			輔	Assistant			
	杠	CanopySupport			玄戈	Sombre lance			

 Table 1. The First Enclosure: Purple Forbidden Enclosure

#### J. Xu

	太微垣 Supreme Palace Enclosure								
五帝	Seats of the five emperors	太微	左垣 Left wall		太微右垣	Right	wall		
太子	Crown prince	上宰	First premier	右執法	Right law administrator	上台	Upper step		
從官	Retinue	東上相	First eastern minister	西上將	First western general	中台	Middle step		
幸臣	Officer of honour	東次 相	Second eastern minister	西次 將	Second western general	下台	ower step		
五諸侯	Five feudal kings	東次  將	Second eastern general	西次	Second western minister	虎賁	Emperor's bodyguard		
九卿	Nine senior officers	東上將	First eastern general	西上 相	First western minister	少微	Junior officers		
三公	Three excellencies	上宰	First premier	郎將	Captain of the bodyguards	長垣	ong wall		
				郎位	Official of imperial guard	靈台	Astronomical observatory		
				常陳	Imperial guards	明堂	Cosmological temple		
				三台	Three steps	謁者	Usher of the court		

Table 2. The Second Enclosure: Supreme Palace Enclosure

work to carry out a comparison between these two systems. Ancient Chinese constellations were rooted in a strong belief of harmony among the heaven, the Earth and human beings. By studying the stories behind the the names of the stars, one learns ancient Chinese astronomy and also Chinese history and philosophy as well.

# References

Chen, J. 2005, Ancient Chinese Constellations Decoding (Beijing: Qunyan Publisher) Sun, X. & Kistemaker, J. 1997, The Chinese sky during the Han: Constellating Stars and Society (Leiden: Brill)

Table 3. The Third	l Enclosure: Heavenly	Market Enclosure
--------------------	-----------------------	------------------

		天市垣 Heavenly	Market Enclosure
帝座	Emperor's seat	天市左垣 Left wall	天市右垣 Right wall
候	Astrologer	魏 WEI	河 中 HEZHONG 紀 Celestial Discipline
宦者	Eunuch official	  趙 ZHAO	河
4	Dipper for liquids	九 河 JIUHE	晉 JIN 貫 索 Coiled thong
斛	Dipper for solids	夭 槍 Celestial spear	鄭 ZHENG 炭 Seven excellencies
列肆	Jewel market	 齊 QI	周 ZHOU
車肆	Commodity market	吴 越 WUYUE	秦 QIN
市樓	Municipal office	徐 XU	蜀 SHU
宗正	Official for royal clan	束 海 DONGHAI	e BA
宗人	Official of Religious Ceremonies	燕 YAN	梁 IANG
宗	Patriarchal clan	南 海 NANHAI	楚 CHU
帛度	Textile ruler	宋 SONG	韓 HAN
屠肆	Butcher's shops		

		ven mansions	0		0	
角宿 Horn Mansion	亢宿 Neck Mansion	氐宿 Root Mansion	房宿 Room Mansion	心宿 Heart Mansion	尾宿 Tail Mansion	箕宿 Winnowing- basket Mansion
角 Horn	亢 Neck	氏 Root	房 Room	心 Heart	尾 Tail	箕 Winnowing basket
平道 Flat road	大角 Great horn	亢池 Boats and lake	鉤鈐 Lock	積卒 Group of soldiers	神宮 Changing room	中山 Zhongshan
夭田 Celestial farmland	左執法 Left law administrator	帝席 Mattress of the emperor	鍵閉 Door bolt		天江 Celestial river	杵 Pestle
周鼎 Tripod of the ZHOU	右攝提 Left conductor	梗河 Celestial lance	罰 Punishment		傳説 FUYUE	
進賢 Recommending virtuous man	折威 Executions	招搖 Twinkling indicator	東咸 Eastern door		魚 Fish	
夭門 Celestial gate	頓頑 Trials	天乳 Celestial milk	西咸 Western door		邈 Tortoise	
平 Judging	陽門 Gate of YANG	天輻 Celestial spokes	El Sun			
庫樓 Arsenal		陣車 Battle chariots	從官 Retinue			
柱 Pillars		車騎 Chariots and cavalry				
衛 Railings		騎陣將軍 Chariot and Cavalry general				
南門 Southern gate		騎官 Imperial guards				

 Table 4. Seven Mansions which belong to Azure Dragon

井宿 Well Mansion		鬼宿 Ghosts Mansion	柳宿 Willow Mansion	星宿 Star Mansion	張宿 Extended Net Mansion	翼宿 Wings Mansion	軫宿 Chariot Mansion
井 Well	四瀆 Four channels	鬼 Ghosts	柳 Willow	<u>星</u> Star	張 Extended net	翼 Wings	軫 Chariot
鉞 Battle axe	関丘 Palace gate	積 <i>P</i> Cumulative corpses	酒旗 Banner of wine shop	天相 Celestial premier	天 <i>廟</i> Celestial Temple	東甌 DONGOU	左轄 Left linchpin
水府 Official for irrigation	軍市 Market for the soldiers	爟 Beacon fire		天稷 Celestial cereals			右轄 Right linchpin
天樽 Celestial wine cup	野雞 Wild cockerel	外廚 Outer kitchen		軒轅 Xuanyuan			長沙 Changsha
五諸侯 Five feudal kings	天狼 Celestial wolf	天記 Judge to estimate the age of animals		御女 Maids-in- waiting			青丘 Green hill
北河 North river	丈人 Grandfather	月 Moon		内平 High judge			軍門 Military Gate
積水 Accumulated water	子 Son	夭狗 Celestial dog					土司空 Master of Con- struction
積薪 Pile of firewood	孫 Grandson	天社 Celestial earth god's temple					器府 House for Musical Instru- ments
水位 Water level	老人 Old man						
南河 South river	弧矢 Bow and arrow						

Table 5. The Seven Mansions which belong to Vermilion Bird

Table 6. The Seven Mansions of the White Tiger

奎宿 Legs Mansion	婁宿 Bond Mansion	胃 宿 Stomach Mansion	昴 宿 Hairy Head Mansion	畢宿 Net Mansion		觜宿 Turtle Beak Mansion	参宿 Three Stars Mansion
奎 Legs	婁 Bond	胃 Stomach	昴 Hairy head	畢 Net	夭關 Celestial gate	觜 Turtle beak	参 Three stars
王良 Wangliang	天大將軍 Great general of the heaven	大陵 Mausoleum	夭阿 Celestial river	附耳 Whisper	天節 Celestial tally	司怪 Deity in charge of monsters	伐 Punishment
策 Whip	左更 Official in charge of forest	積 <i>尸</i> Heaps of corpses	齊 QI	天街 Celestial street	九州殊口 Interpreters of nine dialects	座旗 Seat flags	玉井 Jade well
附路 Auxiliary road	右更 Official in charge of pasturing	天船 Celestial boat	卷舌 Rolled tongue	夭高 Celestial high terrace	参旗 Banner of three stars		鈇鉞 Axe
軍南門 Southern military gate	天倉 Square celestial granary	積水 Stored water	天讒 Celestial slander	諸王 Feudal kings	九斿 Imperial military flag		軍井 Military well
閣道 Flying corridor	天庾 Ricks of grain	天廩 Celestial foodstuffs	礦石 Whetstone	五車 Five chariots	天園 Celestial orchard		屏 Screen
外屏 Outer fence		天囷 Circular celestial granary	天陰 Celestial YIN force	柱 Pillars			廁 Toilet
天溷 Celestial pigsty			芻 蒿 Hay	威池 Pool of harmony			屎 Excrement
上司空 Master of construc- tions			天苑 Celestial meadows	夭潢 Celestial pier			

斗宿 Dipper Mansion	牛宿 Ox Mansion	│ 女宿 Girl	l Mansion	盧宿 Emptiness Mansion	危宿 Rooftop Mansion	室宿 Encampment Mansion	壁宿 Wall Mansion
나 Dipper	牛 Ox	女 Girl	趙 ZHAO	虚宿 Emptiness	危 Rooftop	室 Encampment	<i>壁</i> Wall
天會 Celestial keyhole	天桴 Celestial drumstick	離珠 Pearls on ladies' wear	越 YUE	司命 Deified judge of life	墳墓 Tomb	離宮 Resting palace	天廄 Celestial stable
天弁 Market officer	河鼓 Drum at the river	敗瓜 Rotten gourd	左攝提 Right conductor	司祿 Deified judge of rank	<u>蓋屋</u> Roofing	螣蛇 Flying serpent	上公 Official for earthworks and buildings
建 Establishment	左旗 Left flag	瓠瓜 Good gourd	鄭 ZHENG	司危 Deified judge of disaster and good fortune	虛梁 Temple	雷電 Thunder and lightning	霹靂 Thunderbolt
天難 Celestial cock	右旗 Right flag	天津 Celestial ford	魏 WEI	司非 Deified judge of right and wrong	天錢 Celestial money	土公吏 Official for materials supply	雲雨 Cloud and rain
<b>狗</b> Dog	織女 Weaving girl	奚仲 XIZHONG	韓 HAN	哭 Crying	人 Humans	壘壁陣 The line of ramparts	鈇鏆 Sickle
狗國 Territory of dogs	漸臺 Clepsydra terrace	扶筐 Basket for mulberry leaves	晉 JIN	泛 Weeping	杵 Pestle	羽林軍 Palace guard	
天淵 Celestial spring	<b>辇道</b> Imperial passageway	十二國 Twelve countries	燕 YAN	璃瑜 Jade ornament on ladies' wear	<b>€∃</b> Mortar	天綱 Materials for Making Tents	
農丈人 Peasant	羅堰 Networks of dykes	周 ZHOU		天壘城 Celestial ramparts	車府 Big yard for chariots	北落師門 North gate of the military camp	
驚 River turtle	天田 Celestial farmland	秦 QIN		敗 <i>臼</i> Decayed Mortar	造父 ZAOFU	│ 糠 Chaff	
	九坎 Nine water wells	代 DAI			天鉤 <sup>Celestial</sup> hook	八魁 Net for catching birds	

 Table 7. The Seven Mansions of the Murky Warrior