

THE PERSIAN ARCHERY MANUSCRIPT IZĀH (REVELATION)
BY TĀHER MĀWARĀ AL-NAHRI

EL MANUSCRITO PERSA SOBRE TIRO CON ARCO IZÁ (REVELACIÓN)
POR TĀHER MĀWARĀ AL-NAHRI

POR

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ABSTRACT - RESUMEN

The current article contains a discussion and translation of an undated Persian manuscript on archery titled *Izāh (Revelation)* written by Tāher Māwarā al-Nahri. Internal references suggest an early date for parts of the text. The author, Tāher Māwarā al-Nahri, is presently unknown and his birth and death dates are uncertain. The author presents himself and his opinions confidently and is very sure of the correctness of his master's teachings. This master, Ja'far Māwarā al-Nahri, is likewise unknown at the moment though the epithet, Māwarā al-Nahri, applied to both of them and meaning «from beyond the river» suggests they were either Transoxanian or descended from people from that area. Therefore it is possible this manual is a unique survival of Central Asian archery traditions.

En este artículo se traduce y comenta un manuscrito persa sin fecha sobre el tiro con arco titulado *Izá (Revelación)*, escrito por Tāher Māwarā al-Nahri. Las referencias internas sugieren que algunas partes del texto fueron escritas en épocas tempranas. El autor, Tāher Māwarā al-Nahri, es actualmente desconocido y las fechas de su nacimiento y muerte son inciertas. El autor presenta sus argumentos, y a sí mismo, con seguridad, y está convencido de la corrección de sus enseñanzas magistrales. Este maestro, Ja'far Māwarā al-Nahri, es igualmente desconocido actualmente, aunque el epíteto, Māwarā al-Nahri, aplicado a ambos, significa «desde más allá del río». Este epíteto sugiere que provenían de Transoxania o fueron descendientes de personas de esa zona. Por tanto, es posible que este manual sea el único que ha sobrevivido en relación a las tradiciones de tiro con arco de Asia Central.

KEYWORDS - PALABRAS CLAVE

Archery; composite bow; Iran; Persia; arrow; bow; thumb ring; releasing; traditions

Tiro con arco; arco compuesto; Irán; Persia; flechas; arcos; anillos de pulgar; lanzamiento; tradición

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1. INTRODUCTION

The following article deals with the translation and annotation of a Persian manual on archery titled *Izāh* (revelation) written by Tāher Māwarā al-Nahri (the Transoxanian) which is presented to the academic community for the first time. The author, Tāher Māwarā al-Nahri, is unknown and the master he refers to, Master Ja'far Māwarā al-Nahri, is likewise a mystery. There is a famous archer known as Abu Ja'far al-Harawī from Herat¹, who might be related to his master. Whoever he was, he followed the school of Abu Hashim al Bawardi (known as Abi-ward in Turkmenistan).² The handwritten manual consists of 98 pages and kept in the Central Library and the Center of Documents of the University of Tehran with the reference number 7796. Each page has dimensions of 26 x 17 cm. The book consists of sixteen parts and each part contains different chapters. The book provides details on the advantages of archery and of the bow and arrow, on the principles of archery, on shooting techniques, on different ways of grasping the bow grip, on locking the thumb, on standing positions and on aiming methods and their different types. Further, the manual talks about estimating the distance, about drawing methods of the bow, about releasing the arrow and about the methods of exiting the bow. The manual also discusses different types of bow, different type of bowstrings and arrows.

Reading the text it is clear that some of the references to other schools are not completely in agreement with either at-Tabari³, Abdallah ibn Maymun (*Arab Archery*)⁴ or Taybugha (*Saracen Archery*)⁵. This is not of itself unusual because there was continuous manipulation of the schools of archery to suit the theories of the various writers. There may be a connection with Abū al-Faḥ Sa'īd Ibn Khafīf al-Samarqandī born in the second half of the third hijra/ninth century CE in Baghdad⁶. He was considered one of the great archers and writers on archery of his time. Although the manual is not dated, it contains hints that suggest early dates for its production especially the section on bowstrings which only describes strings made from rawhide as being usable instead of silk. Another detail is that one loop should be larger than another which is very archaic and goes back to the first few centuries of the common era. It is a feature of straight ended bows carried in long bow cases that were usually carried unstrung except when in action. The upper loop was permanently attached to the bow tip while the lower loop could be slipped off to unbrace the bow. *Arab Archery*⁷ for instance strongly recommends the loops should be of the same size and this is the common opinion of later writers⁸. In *Arab Archery*, even though rawhide strings are praised, silk strings are also known.⁹ This could just be a piece lifted from an earlier writer or it might be a local practice of the Chagatayid tribesmen (the Manchus also sometimes used both rawhide and silk bowstrings well into the 18th century)¹⁰ so it is not a positive identifier, but it may be indicative of an early origin.

¹ See Al-Sarraf, 2004: 66.

² Latham & Paterson, 1970: 39.

³ Latham & Paterson, 1970: 134-135.

⁴ See Al-Sarraf, 2004:167-168 n.84.

⁵ See Latham & Paterson, 1970.

⁶ Al-Sarraf, 2004:162.

⁷ See Faris & Elmer, 1945: 98.

⁸ See Latham & Paterson, 1970: 22.

⁹ See Faris & Elmer, 1945: 94.

¹⁰ See Capon, Menzies, & Yang, 2000: 144.

2. PRACTICAL ARCHERY TIPS

Some terms in the text are confusing such as *bus* بوس which means «kissing». The word was imported into English in the Sir Richard Burton's translation of 1001 Nights in the 19th century although it faded out of use.¹¹ «Arab. «*Bassak*,» half Persian (*bas* = enough) and *-ak* = thou; for thee. *Bas* sounds like our *bus* (to kiss). Further research suggests Burton resurrected an archaic English word with the same pronunciation.¹² It is not clear whether it refers to a special practice arrow, a type of dart (which is unlikely), or a form of shooting. In spite of the confusing nature of some of the technical terms, the archery manual provides very useful and practical archery tips. Some examples will be given here. In Part Three the manual stresses that beginners should practice with a «training bow» as a training bow is meant for the beginners so their limbs get used to drawing the bow and releasing. In part four, the author differentiates between three methods of shooting an arrow: a) the «oblique» method of Ja'far (Transoxanian method), b) the sitting method (the method of Bahrām Gur [Sassanid king]) and c) «shooting straight» (the method of Tāher Balxi [famed Persian archery master]).

In part five of the manual, Tāher Māwarā al-Nahri describes how to grasp the bow grip. However, there are some inconsistencies regarding grasping the bow grip in the text. The following grasps are identified: a) *qabze-ye Ja'far*, probably the *čangāl-e bāz* (hawk's clasp grasp), b) *qabze-ye moharref*, probably the oblique grasp of *Saracen Archery*¹³, c) *qabze-ye Bahrām*, referred to as the same as *moharref*, d) *qabze-ye čāhrsū*, maybe the grasp of 30 (which refers to the position of the thumb and index finger, not the overall position of the grip in the hand¹⁴ and e) *qabze-ye Tāher*, referred to as the same as *čāhrsū*.¹⁵ We should note that different Persian archery manuals do not agree on the nomenclature regarding different styles of grasping the bow grip. There is no consistency and agreement on the terms defining grasping the bow grip in seven different Persian archery manuals: a) a manual on archery by Šarīf Mohammad the son of Ahmad Mehdi from the period of Shāh Ismā'il Safavid (1502-1524 CE)¹⁶, b) *Jāme al-Hadāyat fi Elm al-Romāyat* [*Complete Guide concerning the Science of Archery*] by Nezāmeldin Ahmad ibn Mohammad ibn Ahmad Shojaeldin Dorudbāshi Beyhaqi from 1032 hijra (1622 CE)¹⁷, c) the undated manual *Resāle-ye Kamāndāri* [*Archery Manual*] collected by Kapur Chand¹⁸, d) an archery manual titled *Resāle-ye Qosnāme* [*Archery Manual*] by an unknown author from the 13th century hijra (18th century CE)¹⁹, e) an untitled archery manual by Mohammad Zamān dated the year 1212 hijra [1797-1798 CE] from the Malek Library in Tehran²⁰, f) an annotated translation and description of an untitled Persian archery manuscript

¹¹ See Burton, private publication: 196, n. 3.

¹² Consult the *Oxford Dictionary*.

¹³ Latham & Paterson, 1970: 42-46.

¹⁴ Faris & Elmer, 1945: 22.

¹⁵ In *Saracen Archery*, Tahir is credited with the square grasp and the oblique grasp in direct contradiction to the author's theory relating type of grasp. The translators note this in the «Comment» section (Latham & Paterson, 1970: 130-135). The grasps are defined by Taybugha based on the position of the *matn* of the grip in relation to the fingers. Square is when the ridge of the *matn* is in the center of the proximal phalanges of the fingers. Oblique is when the center of the ridge of the *matn* is lodged in the proximal creases of the fingers. Intermediate is when the center of the ridge of the *matn* is between these two positions. Generally the square grasp is associated with Abu Hashim, the oblique with Tahir al-Balkhi and the intermediate with Ishaq ar-Raffā', Bahram Gur and at-Tabari.

¹⁶ See Moshtagh Khorasani and Dwyer, 2012.

¹⁷ See Dwyer and Moshtagh Khorasani, 2012.

¹⁸ Dwyer and Moshtagh Khorasani, 2013.

¹⁹ Dwyer and Moshtagh Khorasani, 2015.

²⁰ Moshtagh Khorasani and Dwyer, 2016b.

written by al-Abdolrāji Abu Torāb al-Musavi al-Qad Makāhi on a day of Jumada al-Thani, the year 1114 (November 1702)²¹ and g) *Izāh* (revelation) by Tāher Māwarā al-Nahri.

Grasping methods of the bow grip	<i>Qabze-ye čangāl-e bāz</i> (hawk's claw grasp) also called <i>eshāqi</i> grasp	<i>Qabze-ye bahrāmi</i> (grasp in the way of Bahrām) or <i>qabze-ye xandān</i>	<i>Qabze-ye morabba'</i> (square grasp) or <i>gerdmošt</i> (rounded fist)	<i>Qabze-ye modavvar</i> (rounded grasp) or <i>tāheri</i> grasp	Širdast (lion's grasp)	Palmer surface grasp	<i>qabze-ye moharref</i> , probably the oblique grasp	<i>qabze-ye čāhrsū</i>
Archery manual by Šarif Mohammad	yes	yes	N/A	N/A	N/A	N/A	N/A	N/A
<i>Jāme al-Hadāyat fil Elm al-Romāyat</i> [Complete Guide concerning the Science of Archery]	yes	yes	yes	yes	N/A	N/A	N/A	N/A
<i>Resāle-ye Kamāndāri</i> [Archery Manual] collected by Kapur Chand	yes	yes	yes	N/A	N/A	N/A	N/A	N/A
<i>Resāle-ye Qosnāme</i> [Archery Manual]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Malek Library archery manual by Mohammad Zamān	yes	yes	yes	N/A	yes	N/A	N/A	N/A
Persian archery manual by al-Abdolrāji Abu Torāb al-Musavi al-Qad Makāhi	N/A	yes	yes	N/A	yes	yes	N/A	N/A
<i>Izāh</i> (revelation) by Tāher Māwarā al-Nahri	Identified as <i>qabze-ye Ja'far</i> it is also described in part eleven.	Identified as <i>moharref</i>	N/A	N/A	N/A	N/A	Yes	Yes

In *Saracen Archery*²², the grasp of Tāher is oblique because he is a small man with small hands and fingers. The grasp of Abu Hashim is square because he is tall.²³ One should note that Taybugha had strayed from the early arrangements of the techniques of the three schools so he is not a definitive source.

In part six, Tāher Māwarā al-Nahri provides essential information how to make a lock for the thumb draw and states that the archer should make three fingers of small finger, the ring

²¹ Moshtagh Khorasani and Dwyer, 2016a.

²² Latham & Paterson, 1970: 129.

²³ See Latham & Paterson, 1970: 129.

finger and the middle finger round [bend them] and strong and hold these three and the thumb ring strongly. Then the archer should place the thumb on the middle finger in an oblique angle so that the side of the nail is placed on the side of the middle finger. The place of the thumb is that you should bend the index finger around the thumb so that the tip of the index finger is placed on the side of the joint of the thumb from the left side and this is the place of the index finger.

In part seven, Tāher Māwarā al-Nahri provides useful information on standing and sitting positions. It specifically states that in a standing position the archer should place his left foot in front of the target. He should keep the heel of the left foot at the same level as the right heel and keep a distance of two spans between them. He should place his right leg firmly and his left leg softly on the ground. Further he should pull his right buttock a bit back so that the middle of the body is oblique. For sitting position the manual states that the archer should sit down straight so that his clothes sit straight and his head to the foot to the face are placed in front of the target so that he aligns the chin with a line through the tip of the left foot and the target. When the arrow is placed, the archer places his right knee on the ground and puts the weight on the top of the right leg and raises the left knee and pull it back a bit.

Parts eight and nine are about the aiming. Tāher Māwarā al-Nahri distinguishes between three aiming methods: a) The Ja'far methods which aims from outside of the bow from the back of the [bow] hand; b) the Bahrām method which aims from inside of the bow by using one eye [that is that he closes his left eye and aims inside the bow with his right eye]; and c) the Tāher method which aims from both sides and this is the «inside and outside aiming».

In part eleven, Tāher Māwarā al-Nahri talks about the drawing methods and states that the archer should draw narrowly so that the thumb gets close to the side of his mouth and moustache. This clearly indicates a moustache draw. There are also four different drawing methods mentioned in Persian archery manuals: a) moustache draw, b) eyebrow draw, c) chest draw and d) beard draw.

Drawing methods	<i>Borutkeš</i> (moustache draw)	<i>Abrukeš</i> (eyebrow draw)	<i>Sinekeš</i> (chest draw)	<i>Riškeš</i> (beard draw)
Archery manual by Šarīf Mohammad	Yes	N/a	N/a	N/a
<i>Jāme al-Hadāyat fil Elm al-Romāyat</i> [Complete Guide concerning the Science of Archery]	Yes	yes	yes	N/a
<i>Resāle-ye Kamāndāri</i> [Archery Manual] collected by Kapur Chand	Yes	yes	yes	N/a
<i>Resāle-ye Qosnāme</i> [Archery Manual]	N/a	N/a	N/a	N/a
Malek Library archery manual by Mohammad Zamān	Yes	yes	yes	yes
Persian archery manual by al-Abdolrāji Abu Torāb al-Musavi al-Qad Makāhi	Yes	yes	yes	N/a
<i>Izāh</i> (revelation) by Tāher Māwarā al-Nahri	The moustache draw is explained in the text.	N/a	N/a	N/a

Part twelve on releasing the arrow is also very important as the manual states clearly how the lock and the arrow should be released. It states that the archer should straighten the index finger fast so that the index finger is not injured and with straightening the index finger in front of the small, ring and middle fingers, he should open [the lock]. He should also open the thumb rounded and open from the left so that the width of the thumb does not strike the arrow nock.

3. TRANSLATED AND ANNOTATED TEXT OF *IZĀH* (REVELATION)

In the following chapter, the full translation and annotation of the whole parts and chapters of the archery manual by Tāher Māwarā al-Nahri is provided. Some small areas are left as dotted lines because either the text was erased or the meaning was unclear:

IZĀH (REVELATION)

In the name of God, most benevolent, ever merciful.

All the praises and thanks be to God who is the Lord of the worlds...

Praises and greeting be upon the Messenger of God... the immaculate and upon the companions and followers

But then I say the weak, the lowest and the powerless subject *Tāher Māwarā al-Nahri* (the Transoxanian) that the science of archery has countless advantages and many good deeds. So, if the dear [readers] would like to and are interested in learning this craft, I have tried to make them courageous in facing the enemy by keeping away from them and by learning its advantages. One of the parts of this book is indeed about the advantages of archery. As the Pure and Great God has given us the science of writing, I decided to write down this science and this book so that it is a reminder and groundwork even for me who talks and teaches this craft. This book consists of sixteen parts. In each part, whatever an archer needs is explained. This book is based on the teachings of Master *Ja'far Māwarā al-Nahri* [Transoxanian], God bless his soul. I name this book *Izāh*²⁴ (revelation). *Part one*: About the advantages of archery; *Part two*: About the advantages of the bow and arrow; *Part three*: About the principles of archery; *Part four*: About shooting the arrow; *Part five*: About grasping the bow; *Part six*: About locking the thumb; *Part seven*: About standing; *Part eight*: About aiming; *Part nine*: About different types of aiming; *Part ten*: Estimating the distance; *Part eleven*: About drawing the bow; *Part twelve*: About releasing the arrow; *Part thirteen*: About exiting the bow; *Part fourteen*: About different types of bow; *Part fifteen*: About different type of bowstrings; *Part sixteen*: About different types of arrows.

PART ONE: ABOUT THE ADVANTAGES OF ARCHERY

You should know doing archery is the order of the Dear and Almighty God and the tradition of the Messenger, greetings upon him, and the one which is based on the book is that the Dear and Almighty God has said, «And prepare against them whatever you are able of power»²⁵. You should know that with the «power», the Dear and Almighty God means the «archery». The meaning of this verse is because the Dear and Almighty God wants you to shoot at the infidels as much as you can with the bow. They have reported that Abqateyn Āker who said and he heard that the Messenger of God said on the pulpit, «And prepare against them whatever you are able of power, verily power is shooting, verily power is shooting» repeating that three times. This is the power of archery. The Dear and Almighty God reports about the brothers of Yussof, blessings of God upon him, who said they were in archery competition when they said that they had given up competing with Yussof. But what is correct based on the

²⁴ ايضاح.

²⁵ This is the beginning of the verse 60 of the 7th *sura al-Anfal* (Spoils of War) of the *Qur'an* (see *al-Qur'an*, 1993: 159).

tradition is that they have reported from Abu Salām that Khalid bin Yazid who narrated: «It was narrated that Khalid bin Yazid Al-Juhani said: Uqbah bin ‘Amir used to pass by me and say: ‘O Khalid, let us go out and shoot arrows.’ One day I came late and he said: ‘O Khalid, come and I will tell you what the Messenger of God said.’ So I went to him and he said: ‘The Messenger of Allah said: Allah will admit three people to Paradise because of one arrow: The one, who makes it, seeking good thereby, the one who shoots it and the one who hands it to him. So shoot and ride, and if you shoot that is dearer to me than if you ride. And play is only in three things: A man training his horse, and playing with his wife, and shooting with his bow and arrow. Whoever gives up shooting after learning it because he is no longer interested in it, that is a blessing for which he is ungrateful -or that he has rejected».²⁶

The meaning of this narration from Abu Salām is that Khalid ibn Yazid said that he was a mortal archer and Uqbah ibn ‘Amir went by and said, «Oh Khalid come to shoot arrows with me». I ignored that so he said, «Let us talk then about the traditions what the Messenger, blessings of God upon him, had told us». The Messenger, blessings of God be upon him, Dear and Almighty God admits three type of people to paradise because of an arrow: the person who shoots an arrow, the person who makes an arrow, a person who hands in an arrow to him. So shoot and ride. I like the person who shoots more than the person who rides. Only three things are permissible and allowed. A man should train his horse first. The second is archery. Third is flirting with his wife. Anyone who stops practicing archery is an infidel. Abu al Qāsem reported from Uqbah ibn ‘Amir who had heard from the Messenger, blessings of God be upon him, that anyone who knows how to shoot a bow and stops practicing is not one of us and is a rebel and has forgotten the narration of Abu al Qāsem. The Messenger of God has said one of these two and God knows all. Abu Harireh also narrated that the Messenger of God said that anyone who knew how to do archery and forgets it, he would be ungrateful towards the blessings of the Dear and Almighty God. Bu Āsmadāni narrated that Aqabeteyn Ām had said that he had heard that the Messenger, greetings of God be upon him, said, «The goodness is the day when they would open the grounds. You should not be incompetent and start to shoot fast so the guardianship expands for you. God will merit you for your attempts against the infidels who are idle and you keep shooting with the bow». Mohammad ibn Ayyās ibn Salame has narrated from his father and forefathers about the Messenger of God, «The Messenger, blessings of God be upon him, was passing a tribe of Bani Aslam who were doing archery. Shoot two or three times and he will be the companion of Ayn Lāde’. The tribe stopped shooting with the bow and said by God they would not shoot the bow with Ayn Lāde’ as long as you are with him, Oh the Messenger of God. He answered peace be upon you and shoot as he will be with all of them. The storyteller says that they dispersed and separated from each other. No tribe was stronger than the other». They have also narrated that Sa’d ibn Abi al-Waqqās said that on the day of [the battle of] Uhud, he was shooting with the bow and the Messenger of God, blessings of God be upon him, said, «Keep shooting and my parents should be sacrificed for you». And Najjāri also confirmed this narration. Ibn Mohammad narrated from Abdollāh ibn Mas’ud, Marwān ibn Moawiye and Umar ibn Khattāb, may God be pleased with them, who had said that if you wanted to talk about the traditions talk about the statutes. If you want to play, do archery. Another thing is that Umar ibn Khattāb, may God be pleased with him, said that you should shoot, run... and wear coarse clothes... Ibn Abbās, may God be pleased with him, the meaning of this message is that anyone who presents a sword for the way of Dear and Almighty God, the angel

²⁶ This part in the manual is a Hadith in Arabic and is from the chapter «A Man Training his Horse» taken from Sunan an-Nasa’i (The Book of Horses, Races and Shooting) 3578 (Book 28, Hadith 18), English Translation (Vol. 4, Book 28, Hadith 3608).

will come... that I am the sword of the son of a said person fighting for the cause of God with this sword. Anyone who shoots with an arrow for the way of Dear and Almighty God, they keep that arrow for the Resurrection Day and the arrow will get bigger than the Mount Uhud. It means that the good deeds of that arrow will be bigger than Mount Uhud.

Chapter: You should know that archery should be done for the Dear and Almighty God as the Messenger of God has said, «Everyone is the person that he has intended to be before. The Messenger of God, blessings of God be upon him, also said that a believer was better than his actions. It means that if archery is done without having a goal, it is only a habit and worth nothing. The habit of each subject becomes praying with an intention. If someone does not eat for a long time, this type of fasting is their habit, but if they intend to fast, this becomes fasting and they can benefit from the good deeds. If archers shoot at the infidels with the right intention, their shooting becomes praying and even the ignorant will benefit from the good deeds. So the hope should be as described by the Dear and Almighty God. They have also reported that if anyone shoots an arrow at an infidel and he dies because of that or is injured, he will become one of true companions or martyrs.

PART TWO: ABOUT THE ADVANTAGES OF ARROW AND BOW

The first advantage of the bow and arrow compared to other weapons is that, on the day of battle, every warrior wants his weapon to be close to the enemy and his body far from him. Spears or lances are better than swords just as swords are better than knives. For example, if there is a distance of three hundred paces between you and the enemy, your arrow will be close to the enemy and your body will be far from him and safe. With other weapons, you get close to the enemy and your body is endangered. Another advantage of archery is that there are three groups of men during the day of the battlefield: swordsmen, archers and spearmen. A swordsman does not have the power to attack thousand men unless he is very courageous. A spearman does not have the power to attack an army unless he knows riding well and is courageous. But the archer has such a power that even in a sitting position can stop an army. The reason is when an archer picks up his bow and starts to draw it, the whole [enemy] army starts to fear, move and cover themselves. By shooting at the head or other targets [of the body], a man can throw down the enemy. Therefore a weapon which is in the hands of a foot soldier can stop an army. Therefore, a weapon is superior to other types of weapons when it has complete advantages compared to those other types of weapons. If a mounted archer with a weak body, lack of heart and even without a shield and only armed with a bow and arrows wants to fight foot soldiers armed with other weapons and even if he wants to fight a courageous man with a big heart who is armed with a shield and sword, he can still do that, because his arrow can find its target, if he wishes so. But the courageous man armed with other weapons cannot threaten him and get close to him, unless the archer himself allows him to get close. The same principle holds for other weapon holders as an archer armed with a bow and arrows can stop them and keep them at a distance. It is obvious that this is the [main] principle of archery. If you say the enemy can go away, I answer that you are wrong as bows and arrows are the weapons of the erudite and not a weapon without reason. Because each weapon which is close to the enemy by keeping one's own body further is better. Bows and arrows are the weapons which can keep away an enemy at a distance of three hundred cubits²⁷ from you and your friends. You will

²⁷ According to the *Digital Lexicon of Dehxodā*, *arash* ارش is a length measurement from the tip of the fingers to the tip of the elbow. This would make it the equivalent of the Arabic *dhira* ذراع though this had several different lengths. The

be safe and the enemy will not be safe even at such a distance. You cannot reach this without having knowledge about this science. Only pure ignorance will keep someone from learning this science. As a result they will pick up other weapons to get close to the enemy and endanger themselves. These are the reasons. You should know that this weapon is the weapon of the erudite. The science is not without reasons. The other reason that the bow and arrows are the weapon of the erudite and not the ignorant is that on the day of the battle, a king told his men to pick up any weapon they like. All the ignorant men did not choose the bow. Only those would pick it up who had learned [how to shoot with it]. The reason is, if he picks up the bowstring, he cannot string the bow. Even if he strings the bow, he cannot draw it. If draws it, he will not be able to shoot with it. If an archer does not reach his aim, it is because they do not know enough about this science. In this case, they will pick up another weapon that they can handle.

Chapter: You should know that the ignorant common people say that bow is called a bow because it is less²⁸ than other weapons because on the day which it is used often, it breaks or the bowstring snaps leaving a man without any weapon and the enemy wins. We say that you are mistaken and your statement is only valid for you. Because everything has its own time and when its time comes it dies. Some [weapons] break and others [weapons] are torn. Even a blade which costs one thousand *derham* and is used much on the day of the battle can break. Based on the order of Great God, there is nothing one can do about it. But the truth is that a bow is called a bow because each weapon which is closer to the enemy by keeping one's own body away is better than other weapons. Thus, a sword is better than a knife, a spear is better than a sword and the bow is better than all others because it is closer to the enemy by keeping one's own body far away. When they found the bow, they realized its art and got to know its advantages and goals. They realized that the bow is above all other weapons. They said that bow means that the other weapons were less than the bow and the bow owns all other weapons.²⁹ No other weapon shares the same meaning nor has the same art as the bow does. The other reason is that if you give the bow to someone else and keep no matter what other type of weapon in your hands, they say it is less than [a bow]. If this is less than other weapons, you explain that less means that other weapons are inferior compared to a bow. So it has become evident that all other weapons are less than the bow and the bow is above all other weapons. The bow has all advantages over other weapons. Some translate the meaning of the bow in a way that they say a bow is called *kamān* because each time the enemy faces your bow, he will be less among his companions meaning that the bow would find him soon and he will disappear [and die].

PART THREE: ABOUT THE PRINCIPLES OF ARCHERY AMONG THE MASTERS AND THE EXPERTS.

There are twelve principles for archers. *First* «knowing the way [of shooting]»³⁰, *second* «grasping the bow handle»³¹, *third* «entering»³², *fourth* «standing»³³, *fifth* «aiming»³⁴,

cubit, *arşın* in Turkish, *dhira* (ذراع) in Arabic. These measurements have several standards depending on location and time period. It is roughly a total distance of 150 meters.

²⁸ It is a reference to the part «*kam*» which means «less» in Persian and is part of the word «*kamān*» in Persian.

²⁹ This is a play with word as «*kam*» means less and «*ān*» means «that»; together it can mean «less than that».

³⁰ *tariq šenāxtan* طریق شناختن.

³¹ *qabze gereftan* قبضه گرفتن.

³² *dar šodan* در شدن.

³³ *beistādan* بیستادن.

³⁴ *nazar kardan* نظر کردن.

sixth knowing the differences in aiming, *seventh* «knowing the distance»³⁵, *eight* «drawing the bow»³⁶, *ninth* «releasing»³⁷, *tenth* «exiting the bow»³⁸, *eleventh* «having adequate equipment»³⁹ and *twelfth* getting used to archery. Some say that archery has four principles. *First* is grasping the bow grip, *second* is releasing, *third* is entering and *fourth* is exiting. The truth is that all these twelve principles are expressed in these four principles. So even if you do not know all these principles, there is no way that you can do without these four principles because if you do all activities of grasping, releasing, entering and exiting in the right way, you will be able to master the craft completely. But some masters have said that among these twelve principles, you need four principles first: grasping, «drawing with the thumb»⁴⁰, releasing the arrow and exiting. Once you have mastered these four, you need the other four and can do without others [other principles]. One is knowing the way of shooting, the second is standing, the third is aiming and the fourth is drawing the bow. After you know these right principles, you need the remaining four principles. Some say that if you know these right principles, you can do without the remaining four. But the right and better method among the experts states that you need every single one of these twelve principles. First you need to know the method of shooting an arrow so that you know which method you would like to use and which method is better than another. This way you can start to learn the other principles in the right order. When you learn a principle, you should get acquainted with it completely and then start to learn other principles. Besides aiming and the differences in aiming [are important] as before learning other principles, you should learn aiming, otherwise you will miss learning the other principles because aiming is the main principle of accuracy⁴¹. The aim of each man should be to achieve accuracy because, if the target is hit accurately, the person who deals with aiming and the science of accuracy will stop doing other things as aiming is the main principle of accuracy [hitting the target]. The goal of any man [archer] is to hit the target [accuracy] as when the target⁴² is hit, he will stop doing any other things.⁴³ That is why he deals with aiming and the science of accuracy so that they reach their goal.

Chapter: You should know that beginners should draw the «training bow»⁴⁴ without an arrow so that their limbs get used to it as a training bow is meant for the beginners so their limbs get used to drawing the bow, releasing, drawing with the thumb, and grasping the bow grip until they do not need a training bow anymore. The training bow is a type of bow which is very weak and soft without power so that, if you pick it up with a finger, it is pulled. The advantage of a training bow is that if they draw it without an arrow, it is not damaged and their limbs get used to it [archery]. After that you shoot arrows and *bus*⁴⁵ with the bow so that after shooting *bus*, you know all principles. You should get used to them so much that you can do

³⁵ *masāfat dānestan* مسافت کردن.

³⁶ *kamān kešīdan* کمان کشیدن.

³⁷ *gošādan* گشادن.

³⁸ *barun āmadan* برو نامدن. This represents an interesting comment. At full draw, the bow and the bowstring are pulled apart and the archer could be considered inside the bow. This is reflected in the term «internal aiming» where you aim between the string and the bow. Going outside the bow is a way of saying what we would term as follow through but it is more poetic. In England, they used to talk of shooting in the bow as opposed to simply shooting with a bow. This could be a similar concept. Drawing the bow is like opening a door and shooting it is like closing it.

³⁹ *sāz-e movāfeq dāštan* ساز موافق داشتن.

⁴⁰ *šast kardān* شست کردن.

⁴¹ *esābat* اصابت.

⁴² *asar* اثر.

⁴³ This could mean that once the target (enemy) is hit, the enemy will be incapable of doing anything else. It could also mean that once the archer has hit the target, he has achieved his goal and does not need to do anything else.

⁴⁴ *kamān- lozum* کمان لزوم.

⁴⁵ *bus* بوس. This is an important term, but why a practice arrow is called a «kiss» bears some investigation.

them one after the other. All archers have no choice but to shoot arrows and *bus* in all positions. The masters consider shooting a training bow, drawing without arrows, shooting arrows and shooting *bus* as principles and the experience shows that there is no way but practicing all these. The distance of arrow and the «place of *bus*»⁴⁶ is equal to the length of «two lips»⁴⁷ so that you know this.

PART FOUR: ABOUT SHOOTING AN ARROW

You should know that among the masters there are three methods of shooting an arrow: *First*, «oblique»⁴⁸ method of Ja'far and this is Transoxanian method. The *other* is the sitting method and this is the method of Bahrām Gur. *Third* is the «shooting straight»⁴⁹ and this is the method of Tāher Balxi.⁵⁰ But the best method is Ja'far's method. The nature of the arrow is based on different arts. *First*, this arrow tends to be hard and long. The reason is that when you are oblique, your arm is close to the side of the body so this requires it to be stronger and longer. From top of the arrow⁵¹ where the arrowhead is placed the power is placed on the man. In the oblique method, the arrow is longer than the arrow of Tāher [method] by some finger joints. In the Tāher method, the hand is even. When the arrow is short, one can draw the strong bow hard, unless it is soft.⁵² You should draw a «short arrow» evenly with the hand. In Bahrām's method, the hand tends downwards and is longer and stiffer. As if another part has come out of the side of the body. [Using this method] you can draw a strong bow well and the arrow [used in this method] is longer than all other arrows.⁵³ Ja'far has chosen the oblique method because it is the middle way between these two methods. The Messenger of God has said that the best things are those which are in the middle. The other thing is that the arm should be on the right side as it was created in front of the right side. They should not force the arm to be extended or kept shorter and only this method is good. Shooting with a shield⁵⁴ only allows the «right oblique method»⁵⁵. The other art means that you should be covered upon shooting with a shield and the shield should not face you frontally. The reason is that the archer should keep three upper parts of the three *gaz*⁵⁶ oblique and the slanting of the side is reached by four fingers so that he is covered. This is reached by sitting in a slanted position. As slanting⁵⁷ covers the man. Ja'far has chosen this method because of these advantages. The reason for shooting an arrow this way is that the bow is stronger and the arrow is longer. With a shield, you can shoot a strong arrow and be covered at the same time. All this becomes obvious in this method.

Chapter: You should know that the first things you should teach beginners is to take and hold the bow correctly. They should look at the bow arms and view the bow ears from both

⁴⁶ *busgāh* بوسگاه.

⁴⁷ *do lab* دولب.

⁴⁸ *moharref* محرف. This is translated as «oblique» in *Saracen Archery* when referring to the grasp. *منحرف* is used to refer to the stance (Latham & Paterson, 1970: 102) as described here.

⁴⁹ *mostovi* مستوی. This word in Arabic means «level» or «standard». It could mean shooting facing the target like the Arabic square stance.

⁵⁰ In *Arab Archery* this is referred to as *Khusruwāni* (Faris & Elmer, 1945:82) and the preferred method of Tāher.

⁵¹ *tiq* تیغ; *tiq* means «blade/sword»; the *Digital Lexicon of Dehxodā* states that another meaning of *tiq* is «arrowhead».

⁵² This could mean unless the arrow is soft and unsuited for the hard bow.

⁵³ In this context, Bahrām's method (grasp in this case) could be the hawk's claw. It is unclear whether this section is about the grasp alone or is a combination of the grasp and the stance.

⁵⁴ *separ* سپر.

⁵⁵ *tahrif rāst* تحریف راست.

⁵⁶ *gaz* گز; according to the *Digital Lexicon of Dehxodā*, each *gaz* is equal to 24 fingers..

⁵⁷ *tahrif* تحریف.

sides. They look at the bowstring and measure its length.⁵⁸ They look at the «ears of the bow»⁵⁹, «higher *gāh*»⁶⁰ and «lower *gāh*»⁶¹, and also the «bow grip»⁶².⁶³ They «charge the bow»⁶⁴ and should know the power of the bow to know whether they can draw it or not. More than this cannot be made obvious and more examples cannot be given unless a master teaches in person. There is no way out but knowing these things and God knows all.

PART FIVE: IN GRASPING THE BOW GRIP

Among the masters, there are three different types of grasping the bow grip. One is the «Ja'far grasp»⁶⁵, another is «slanted grasp»⁶⁶ and this grasp is the «grasp of Bahrām»⁶⁷. The third is the «four-sided grasp»⁶⁸ and is the «grasp of Tāher»⁶⁹. These are the most popular grasps and the Ja'far grasp is the best. You should know that the grasping method is the best which fits to the hand of each individual archer best. The aim of grasping the bow grip is that it is stable and does not cause any problems. Because each grasping method is meant for a special hand, most shapes of hands are meant for a special shape of a bow grip. If it does not fit, you should change the grasp to fit the grip. But, if it is Ja'far method, it is better and God knows all. There are seven indispensable prerequisites for grasping the bow grip so that it is grasped properly.

First you should rub the palm of the hand and grasp the bow grip in a way so that the lower part of the grip is not twisted⁷⁰ in the palm of the hand and to prevent the hand from being hurt. *Second* you should bend three fingers, the small finger, ring finger and middle finger around the bow grip so that when one looks, they are all even. Some say that the tips of these fingers should be pressed harder on the bow grip. You should keep the index finger and the thumb moderate so that this bifurcation⁷¹ [referring to the thumb and the index finger] does not tire. Note that these bifurcated fingers get exhausted when the thumb is held tensely.

Third, you should keep the thumb straight on top of the index finger so that they are even.⁷² It should be a bit slanted a bit to the right so that the arrow passes evenly from the side of the finger and it does not fly unevenly upon leaving [the bow] and it does not burn the bridge [the thumb] and rub the nail.

⁵⁸ This could mean a number of things. The simplest interpretation is that the archer should check the brace height of the string to make sure it is correct.

⁵⁹ *borjegān* برجگان.

⁶⁰ *gāh-e zebarin* گاه‌زیرین.

⁶¹ *gāh-e zirin* گاه‌زیرین.

⁶² *qabzegāh* قبضه‌گاه.

⁶³ This is probably directly related to the previous statement and the archer must check that the distance from the string of the various parts of the bow matches between the upper and lower parts of the bow. A composite bow can be out of balance with one limb bending more than the other. This can occur during bracing or simply while the bow is resting.

⁶⁴ *kamān čāšni kardan* کمان‌چاشنی‌کردن.

⁶⁵ *qabze-ye ja'far* قبضه‌جعفر.

⁶⁶ *qabze-ye moharref* قبضه‌محرّف.

⁶⁷ *qabze-ye bahrām* قبضه‌بهرام.

⁶⁸ *qabze-ye cāhrsū* قبضه‌چهارسو. This is probably the equivalent of the Arabic square grasp.

⁶⁹ *qabze-ye tāher* قبضه‌طاهر.

⁷⁰ *šekanj* شکنج.

⁷¹ *došāx* دوشاخ.

⁷² This means the thumb and index finger should be at the same height and the thumb resting against the top (i.e. the nail) of the index finger.

Fourth, the arrow should be kept firmly on the bone and the top of the hand so that the heel of the hand is not in the bow.⁷³

Fifth, you should grasp the bow grip in a way no matter if grasped with rounded⁷⁴ [method], oblique⁷⁵ [method] or four-sided⁷⁶ [method]. The target should be positioned in the middle of the thumb and the middle finger [of the bow hand] so that the bow grip is visible in the middle. This can be reached by placing the tip of the index finger on the middle joint of the middle finger.

Sixth, the arrow and the thumb ring should be straight towards the right forearm.⁷⁷ Because, if they are higher, you will shoot the arrow high. If they tend towards the back, the heel [of the hand] is within the bow and if they tend forward, the bowstring will hit the arm.

Seventh, you should make your grasping agreeable to your heart and keep it hard at the end [i.e. do not slacken the tightness of the grasp when you reach full draw]. Every grasping method should be strong so that it is not deficient and it is agreeable to the heart and held tight at the end. The mistakes of grasping include making blisters in the palm of the hand, pounding the bifurcation [the thumb and the index finger], burning the bridge [the back of the bow hand]⁷⁸, injuring the thumb, abrading the nail and striking the arm with the bowstring. If you grasp as mentioned before, these mistakes will not happen.

PART SIX: ABOUT THE «THUMB DRAW»⁷⁹

You should know that the principle of the thumb draw is that during the day of battle the Messenger, the blessings of God be upon him was shooting an arrow without using a «thumb protector»⁸⁰ and so he could not draw a bowstring shooting a heavy arrow. He wanted to shoot with a stronger bow so that his arrows would cause more severe injuries. Gabriel, greetings upon him, came and brought the thumb protector and taught the Chosen One, blessings of God be upon him, how to shoot with the thumb protector. He said, «Oh [the] Messenger of God hide the thumb protector so that the hypocrites would not find out about it otherwise they would teach the infidels. You should know that covering and hiding the thumb protector is the tradition and order of Gabriel, greetings upon him, so that others who do not know about this tradition of archery would not find out about it. So it should be covered well. You should know that holding the thumb ring is correct if upon drawing [the bow] from the beginning until the end, the thumb⁸¹, the index finger⁸² and the bowstring are all in their proper positions. You should know that the principle of the thumb draw is that you should hold the thumb protector properly and there is no other way. First you should make three fingers of small finger⁸³, the

⁷³ This is probably refers to the arrow sitting on the proximal section of the thumb and the hand being turned down so that the hypothenar eminence is clear of the bow grip.

⁷⁴ گرد *gerd*.

⁷⁵ محرق *mohraq*. This means «burning», but here it might be a copier's error for محرف for slanted or oblique.

⁷⁶ چارسو *čārsu*. This could be the Persian equivalent of the Arabic square grip, مربع. It could also refer to the grasp of 30 which the thumb and forefinger form a square when looked at from above.

⁷⁷ This means the thumb should be level and in line with the right forearm.

⁷⁸ پل *pol*. In this case it means the part of the thumb that the arrow rests on.

⁷⁹ شست گرفتن *šast gereftan*.

⁸⁰ شست *šast*.

⁸¹ ابهام *ebhām*.

⁸² سبابه *sabbābe*.

⁸³ خنصر *xenser*.

ring finger⁸⁴ and the middle finger⁸⁵ round [bend them] and strong and you should hold these three and the thumb ring strongly. Then you should place the thumb on the middle finger in an oblique angle so that the side of the nail is placed on the side of the middle finger. The place of the thumb is that you should bend the index finger around the thumb so that the tip of the index finger is placed on the side of the joint of the thumb from the left side and this is the place of the index finger. And you should not hold the thumb and the index finger harder than the others upon drawing the bow. You should place the bowstring on the bend⁸⁶ of the thumb ring root and not in the palm of the hand so that upon drawing the bowstring, it causes the thumb ring to go back from its original place.⁸⁷ The top of the [index] finger becomes round [locks] in front of the bowstring. When you release the arrow, the jewel⁸⁸ [thumb ring] is lifted and the bowstring goes back to its original place. Some say that straightening the thumb ring properly is placing the hard on the hard and the soft on the soft. Some say that straightening the thumb ring properly is making the short thumb longer and the long index finger shorter. You should keep the thumb ring strong and free. The strength of the thumb ring means that from the beginning until the end of the draw, you should keep the thumb ring in its proper place so that you do not lift the thumb from the middle finger. Because, if you lift the thumb, the thumb ring becomes loose. The strength of the arrow is because of the thumb ring. You should hold the nock firmly and strongly with the thumb ring and the thumb. You should keep the nock so the arrow is placed and the power applied to the arrow should be transferred accordingly, it means the power applied to the thumb ring should be in a way that the arrow is kept in its place and does not fall. The power applied by the thumb should be done in a way that there is a small opening between the thumb and the nock and nothing more. You create this opening by bending the thumb a bit and hold your index finger in a way so that you place the «face of the arrow» on the thumb so that you can hold the nock firmly and properly and you do not put the power of the index finger on the arrow.⁸⁹

PART SEVEN: ABOUT STANDING AND SITTING

You should know when the archer is standing, the front of his left foot should be in front of the target. The heel of the left foot is at the same level as the right heel⁹⁰. Between the right heel and the front of the [left] foot, there should be a distance of two spans. You should trust your right leg [place it firmly] and place your left leg softly on the ground. You should pull your right buttock a bit back so that the middle of the body is oblique⁹¹. The sign of this method is the «twist»⁹² which is reached by twisting the middle of the body. You should sit down straight so that your clothes sit straight and your head to the foot to the face are placed in front of the

⁸⁴ *benser* بنصر.

⁸⁵ *vasati* وسطی.

⁸⁶ *šekanj* شکنج.

⁸⁷ This is a significant comment. It implies you should not let the string get so close to the inside edge of the thumb guard that it slides onto the hand (i.e. the inner surface of the proximal segment of the thumb) and moves the ring out of position.

⁸⁸ *Negine* نگینه means a «jewel» which according to the *Digital Lexicon of Dehxodā*, also refers to a bejeweled thumb ring or lens-shaped eye.

⁸⁹ This is saying that, while the thumb and the index finger keep the arrow in place by forming a cradle for it, they should not press on the nock with any force.

⁹⁰ *ka'b* كعب means «joint of a bone». It is also «heel» in Arabic.

⁹¹ *moharref* محرف. This refers to the stance rather than the inclination of the body.

⁹² *tahrif* تحريف.

target so that you align the chin with a line through the tip of the left foot and the target. You should pull the chin a bit inside so that the neck is hard and the face remains in its position and the right ear is hanging. The advantage of keeping the face straight is that aiming is done in the right position and does not become faulty to prevent hitting the target. When the arrow is placed, you place your right knee on the ground and trust [put the weight on] the top of the right leg and raise the left knee and pull it back a bit. Still on the foot, you put your buttocks back so that you can sit firmly. This chapter is no more than this that you should keep your face straight so that it is visible.⁹³

PART EIGHT: ABOUT AIMING⁹⁴

There are three chapters about aiming. First is the way of aiming and there are three methods. Ja'far aims from outside of the bow from the back of the [bow] hand. Bahrām aims from inside of the bow by using one eye [that is that he closes his left eye and aims inside the bow with his right eye]. Tāher aims from both sides and this is the «inside and outside aiming»⁹⁵.

First chapter is about aiming. The nature of aiming consists of knowing when you should straighten [the bow] and aim correctly so you can hit the target and the aiming is done correctly. Each master says something different about it. Some say that there are thirty mistakes including those with the arrowheads. But this is a wrong statement because these mistakes are different from the thirty mistakes and they cannot be the same thing. Some say that upon drawing⁹⁶, the arrowhead should point straight towards the target so that the aiming is correct. But this method has its own deficiencies and you should know about that. Some say that the back of the hand should point straight towards the enemy. The principle of this aiming is based on the idea that if the left [hand] points directly, the target will be hit. If there are any mistakes in the left [hand], this [method] will be deficient and this will be explained. But this should not be the principle because if the distance becomes longer or shorter, this aiming will become deficient. But the real and true aiming [method] among masters is a method which consists of keeping everything pointed towards the enemy from the draw until the release like the «point of a compass»⁹⁷ so that the target is hit. Within the distance of forty paces, all the methods of Bahrām, Ja'far and Tāher used with a strong or a light bow work. But when the distance increases or decreases, then this changes.

Second chapter: About the quality of aiming. The quality of aiming consists of where to look during the aiming. During the aiming, you should look at the enemy so that you do not look at anything else but only at the place of your objective where you are aiming. They say that the mirror of the archer should be the target. The top of the hand of the archer should see the target in the middle of the «home of danger»⁹⁸ as if you are looking at your face in a mirror and your eyes are not covered. The true and right aiming means that you should keep the aiming from the beginning until the end with yourself the same way as an example has been given. Unless you are standing on your feet, in this case aiming is sufficient towards the end of the drawing. Some even say that you should aim upon the release just in case that the bow

⁹³ This is emphasizing orienting the face to allow binocular vision to attain good depth perception.

⁹⁴ *nazar dāstan* نظر داشتن.

⁹⁵ *nazar-e andarun va barun* نظر اندرون و بیرون.

⁹⁶ *gošādan* گشادن.

⁹⁷ *noqte-ye pargār* نقطه پرگار.

⁹⁸ *xāne-ye xatar* خانه خطر.

causes problems towards the left or it does not behave as usual or similar things. In these cases when the aiming is done upon the release, you can avoid these problems.

Third chapter: You should know that the science of aiming has five prerequisites so that aiming is done in a correct way and you can hit the target. *First*, you should keep the left [hand] in its own place upon drawing. *Second*, you should keep the face straight. *Third*, [you should keep the face straight] also upon releasing. *Fourth*, exiting fast upon the release. *Fifth*, shooting the arrowhead from the same place. Aiming should be done as described. If you know the aiming principles, you can always hit the target. The reason is that all methods contain the aiming. But even when you respect all these principles and the aiming is still deficient, it is due to the fact that hitting the target is a gift of Almighty God. For example, if you aim at an animal and at that time, Almighty God has not issued an order, it [the arrow] flies but the target is not hit. The same is true with the subjects [of God]. Everyone has a certain profession and destiny based on the reason and truth. Outside of the order of the Almighty God, nothing will happen. You should be aware of your knowledge.

PART NINE: KNOWING ABOUT DIFFERENT TYPES OF AIMING

You should know that if the distance is above forty bows [length], you should hold a bow in your [bow] hand so straight so that if a drop of water drops from the «high bow ear»⁹⁹ it goes to the «low bow ear»¹⁰⁰. When the distance is greater elevate the bow (raising the lower end of the bow in the process), when it is less, lower the bow. Based on the «ignorance or blindness of the bow»¹⁰¹, the masters of aiming¹⁰² consider the bow as correctly aligned¹⁰³. This ignorance of the bow should be of new type. You should know that the differences in aiming in increasing and decreasing the distance follow the main principle that if the distance is not increased by a pace, the aiming is within the three hundred and sixty. If the target is closer, this will become obvious. This is the principle which the masters consider as wise. This is shown by experience and by shooting a lot. You should know that one «pace on the ground»¹⁰⁴ equals one and half cubits¹⁰⁵. One and half «short fast paces»¹⁰⁶ is a *dāng*¹⁰⁷. When it is nine *dāng*, it is *eyšar*¹⁰⁸. When you reach ten *eyšar*, you divide each *eyšar* in three hundred and sixty parts. One *eyšar* is divided between four parts¹⁰⁹. You should know that if the distance is increased by four paces¹¹⁰, he will distance from his original position by one *eyšar*.¹¹¹ The further the distance, the aiming increases accordingly and the leg of the bow goes higher. If it gets close

⁹⁹ *kuh-e zebarin* کوه زبرین.

¹⁰⁰ *kuh-e zirin* کوه زیرین. Note that *kuh* means «mountain» or «raising». Possibly, here it refers to the «bow ear».

¹⁰¹ *jahl-e kamān* جهل کمان.

¹⁰² *nešāngāh* نشانگاه.

¹⁰³ *rāstī* راستی.

¹⁰⁴ *gām-e zamin* گام زمین.

¹⁰⁵ *arš* ارش. The *Digital Lexicon of Dehxodā* states that one *arš* is a distance from the tip of the fingers to the tip of the elbow. This is the common cubit. 1.5 cubits equals 27 inches. In English measure, a pace is 30 inches. However, there are other cubits used in the Middle East. The Baghdad cubit (*dhira*) was 49.875 cm or 19.63 inches. A pace based on this would be 29.26 inches.

¹⁰⁶ *deram* درم. The *Digital Lexicon of Dehxodā* says that *deram* means «short fast pace».

¹⁰⁷ *dāng* دانگ. The *Digital Lexicon of Dehxodā* says that one *dāng* means 1/6 of anything.

¹⁰⁸ *eyšar* عیشر.

¹⁰⁹ *jōzv* جزو.

¹¹⁰ *gām* گام.

¹¹¹ In an earlier translation, *dāng* is shown as a fraction. If it is a sixth, then 9 *dāng* is one and a half, which might correspond to a *deram*.

by four paces, the aiming will go down by one *eyšar*. The further it goes, the aiming gets higher accordingly and the leg of the bow goes higher. If the distance increases by four paces, the aiming is adjusted accordingly and the leg of the bow goes higher. If increasing and decreasing the distance and the difference in aiming correspond to each other, the target will be hit. If it is not the case, the arrow will be wasted. Wasting an arrow means that either the arrow goes over the enemy or it hits the ground before reaching the enemy. This can be learned by experience or by shooting a lot. The archer has no other way but learning this.¹¹²

Chapter: You should know that when the distance increases by ten or twenty paces and you want to shoot with an «arrow-guide»¹¹³, the aiming will increase and the target can be hit. In this case, you should straighten your right leg, keep your neck stiff and press on the bow handle, thumb guard and the head. These will enliven the archers and the position of aiming will stay in its proper place and you can reach your target. Thus the distance will become closer a bit and the arrow goes in that arrow-guide and the aiming remains in its [proper] position so your aim will be reached. God knows all.

PART TEN: ABOUT KNOWING THE DISTANCE

You should know that an archer no matter where they shoot from long or short distances, from heights to lower levels and from lower to higher levels, within fortifications¹¹⁴ and in deserts, he should know the distance between himself and the enemy so that he can shoot at the enemy efficiently. This way if there is a distance of hundred paces between you and the enemy, and you think there are hundred and twenty paces or eighty paces, because of [a wrong assumption of] these two distances, the arrow would not reach its target and your arrow would be wasted. The reason is that in all circumstances, you should know the distance well so that your arrow reaches its target and does not fail it and you reach your aim accordingly. You should know when an archer picks up an arrow, he is able to determine the distance between himself and the enemy. If they are on a wall, they estimate the [distance on the] ground a bit more and in the desert, they estimate the long distance closer so that they can reach their goal. The reason for doing this is so that their arrow reaches its target. An archer has no way but knowing this. This skill can only be gained by experience and shooting a lot and God knows everything which is good.

Chapter: You should know when you would like the arrow to reach the enemy. *First*, if it reaches the enemy with a problem, the enemy cannot get hold of your arrow. *Second*, he cannot pick it up and shoot it back because he is afraid of getting closer and your other arrows

¹¹² The discussion of aiming is the most difficult. The mention of 360 suggests degrees and it could refer to the horizontal component of aiming. The reference to paces and sixths (*dāng*) suggests a relationship between distance and elevation. The relationship between one and a half and nine sixths implies an attempt to establish a connection between the various concepts. Therefore one and a half cubits equals a pace. One and a half paces equals a sixth. Nine sixths equal an *eyšar*. One *eyšar* is attributed to four parts. The author then says «You should know that if the distance is increased by four paces, he will distance from his original position by one *eyšar*.» It seems that the *eyšar* is an increment of elevation. The fact that ten *eyšar* are divided into 360 parts each may be a miscopying of some other phrase. It contradicts the fact that one *eyšar* is divided into or between four parts. In shooting, increased range requires elevation and decreased range requires declination. At-Tabari had a method of aiming by rotating the bow hand wrist. In this case the 360 could refer to the possible angle of rotation of the wrist. You rotate to the left (counter clockwise) to increase range and rotate to the right (clockwise) to reduce range. This is not very clearly explained in *Saracen Archery* on page 134. It can be deduced by the fact that at-Tabari did not raise or lower the arm and he mentions changing the angle of the bow arm when drawing the bow.

¹¹³ مجرى *majrā*.

¹¹⁴ دیوار بست *divārbast*.

reach him so, if you do not reach anything with your initial shooting, the enemy cannot do anything with it [your arrow]. *Third*, note that an arrow which reaches the ground finds the enemy and destroys him. This has happened often. But there are problems with an arrow which passes the enemy. *First*, when your weapon reaches the hand of the enemy, your attempts will fail. *As well*, the enemy can pick it up and shoot back at you so your shooting reaches nothing and shooting far causes problems in this case. Therefore, masters have created «nockless arrows»¹¹⁵ for these circumstances so that the enemy cannot shoot them back. Shooting these [nockless arrows] would be better by using an arrow-guide¹¹⁶ so that it flies more smoothly and causes better wounds and God knows all.

PART ELEVEN: ABOUT DRAWING THE BOW

You should know that one of the most important things in archery is drawing the bow. Because shooting an arrow means drawing a bow. No other example can be given to describe the quality of this truth. There are *twenty* prerequisites for drawing the bow properly. There are *five* indispensable prerequisites for the right hand and *five* prerequisites are in the left hand. *Five* prerequisites outside of these both hands. There are *five* prerequisites for drawing the bow properly. There are *five* prerequisites for the body. *First* is that in the beginning of drawing the bow, the chest should be opposite in the middle so that the chest is in front of the target. You should bring the chest slowly in the middle so that when you stretch¹¹⁷ the bow, the chest and the middle of the target are in the same line. *Second*, you should twist the middle of your body so that the bow is not drawn along the width. *Third* you should keep those limbs strong which should be kept tense.¹¹⁸ *Fourth*, in drawing you should not get out and stiffen your chest.¹¹⁹ *Fifth* you should keep your aiming in its position. Now *five* prerequisites for the right hand are: *First*, you should keep the elbow raised so that the side of the body is opened. *Second* you should keep the arm hard so that the side of the body is opened. *Third* you should keep the elbow straight until the end of the draw so that if you placed a drill into the elbow, it would come out of the arrowhead. *Fourth*, you should keep and hold the right hand in a way that if someone looks at your [right] elbow from the beginning of the draw until the release, he sees the elbow with the thumb ring and the arrowhead in the same line towards the target. This is reached by twisting¹²⁰ the middle.¹²¹

Chapter: Drawing a bow is running the elbow. If someone asks for drawing by stating that one needs to draw the bowstring or the thumb ring or the top of the hand, answer you should neither draw the bowstring nor the thumb ring nor the top of the hand, but drawing is about

¹¹⁵ *tir-e bisufār* تیربی‌سوفار. This is a type of arrow shot in battle from a temporary nock attached to the bowstring. It cannot be shot back by the enemy unless they have a similar device. In *Saracen Archery*, the arrow is described as being shot from a ring (*zaradah*) tied to the string or a horn detachable nock (*julbah*) or a detachable string loop (Latham & Paterson, 1970:138-140).

¹¹⁶ *majrā* مجری. There is a specific type in *Arab Archery* (Faris & Elmer, 1945:142-145) that has a horn runner with an axial hole to take nockless arrows. These could be solid iron and shorter than a regular arrow.

¹¹⁷ عراق *araq*.

¹¹⁸ سخت *saxt*.

¹¹⁹ Considering that getting out may mean being out of alignment with the bow, it could refer to stiffening the chest to make up for the lack of strength that poor alignment induces.

¹²⁰ پیچیدن *pičidan*.

¹²¹ This is a very important section. The first point about keeping the elbow raised must mean to not let the elbow sink down below the horizontal. The other points clearly state that the elbow, thumb ring and the arrowhead must form a straight line. Secondly, this alignment must exist throughout the whole draw.

running the elbow.¹²² You should know that the top of the right hand should pull back upon drawing and the elbow should be kept straight upon releasing. These two arts can be reached by respecting two things. *First*, is raising the elbow so that the right hand can be pulled back and the other is returning¹²³ upon the release so that the elbow is kept straight. There are many mistakes which could be caused by the right hand but when you respect these two arts, all these mistakes can be avoided.¹²⁴ There are five prerequisites for the left hand. *First*, you should keep the left arm straight in the same line with the body as it was created so it does not tend to the right or left. *Second*, the left arm should be kept alive and strong. *Third*, you should keep the left arm by degrees until the end of the draw. *Fourth*, the elbow should not turn, so that the left arm is kept straight and this cannot be done with suffering. *Fifth* requires that you place your left shoulder on it so that the shoulders do not rise and this is the art of standing on the left. The mistake of the left upon drawing is bending and upon releasing raising and I swear this will lead to shooting at the left or the right side. If you want to stand on the left without making such mistakes, you should keep the right leg, the neck, and the eyes firm so that the left is kept straight. The five prerequisites which are for drawing the bow are: *First* you should draw in a straight manner. *Second*, you should draw evenly. *Third*, you should draw slower by remaining calm and drawing hard requires being rigid. *Fourth*, you should draw narrowly so that the thumb gets close to the side of your mouth and moustache. Unless you are on your own, you should respect a bit the rule of suspension.¹²⁵ *Fifth*, it means that in «full»¹²⁶, they do not draw the arrows until feathers in front of hypocrites as these were not honest to the Muslims. They did this so that their arrows have lesser effect on infidels. Therefore, «drawing less»¹²⁷ is not proper.¹²⁸ The signs of drawing in a straight and even way are six things: *First*, both ends¹²⁹ of the bow should be aligned with each other and straight. For example, if a drop of water drops from the upper raising¹³⁰ it goes to the lower raising. If it is slanted a bit and the arrow is still in the bow, that is also proper.¹³¹ *Second*, you should not draw one bow arm¹³² more than the other and do not draw them less.¹³³ *Third*, the bow should be held even with the side of the right eye from the right side from the beginning until the end.¹³⁴ *Fourth*, the bowstring should be straight in the middle of the bow from the beginning until the end.¹³⁵ *Fifth*, while drawing to the earlobe, you should not draw underneath it.¹³⁶ *Sixth*, you should draw with heart so that the lower bow ear is straight with the arrowhead. In drawing, the elbow should be so straight with the bow grip so that no one is higher and lower so that the arrow

¹²² This means that you should concentrate your draw starting at the elbow and supported by the back muscles. The forearm hand and the thumb ring hang off the elbow.

¹²³ *bāz pas šodan* بازپس شدن.

¹²⁴ This part seems to imply that the preferred draw requires that the elbow be kept in line with the hand and the arrowhead and on the release it stays in line.

¹²⁵ *moa'laq* معلق. It is not clear what this word means here. This word can mean hanging and in the context it might mean holding the exit position longer or shorter depending on whether you are in company.

¹²⁶ *parkeši* پرکشی. It literally means «pulling the feathers».

¹²⁷ *kam kešidan* کمکشیدن.

¹²⁸ The point here is you do not want show your traitors the best way of shooting.

¹²⁹ *sar* سر.

¹³⁰ *kuh* کوه.

¹³¹ This suggests the degree of canting the bow is a pragmatic choice.

¹³² *xāne* خانه.

¹³³ It is possible, while tightly holding the grip, to accidentally pull slightly down or up and thus stress one limb or the other.

¹³⁴ It clearly means that the bow should be drawn in one plane, not inwards to the body or outwards away from it causing a distortion in the path of the arrow.

¹³⁵ This refers to the same process but localizing it to the string. It is easier to visualize as the string bisecting the bow.

¹³⁶ This is referring to the height of the arrow on the face rather than the distance the arrow is drawn.

does not tend to the right and cannot be fully drawn until the end and other towards the left. In drawing, all prerequisites should be respected. The sign of drawing is that the arrow should fit the bow. If the arrow does not fit the bow in this case, the middle of the thumb ring should be in front of the earlobe so that the size is proper.¹³⁷ If the size is proper and it reaches the bow grip and the «arrow pass»¹³⁸, it is completely immersed.¹³⁹

Question: What is the difference between the case where the arrow fits the bow and when it is released from the middle of the bow grip and the arrow which has reached the arrow pass. They have said that the injury caused by an arrow which fits the bow is like warm ashes. The injury caused by an arrow which is released from the middle of the bow grip is like hot fire. And the injury caused by an arrow which is released from the arrow pass is like the Great God¹⁴⁰ taking away the life. The masters have said that similar to a «*tiq-e derami*»¹⁴¹ it is powerful on top of the arrow and it depends on the man. The more they draw, the more severe will be upon releasing the arrow from their side. The power of the straight arrow plays also a role in stealing¹⁴².

Chapter: If someone asks why they draw the arrow in front of the ear. [The answer is] if the hands are straightened towards the enemy, then the drawing should be in front of the eye and the ear in the middle. Then what is the difference for the middle. We need to say that there are two facts which need to be taken into account. And this is the thumb ring. The thumb ring should be straight with the arrowhead. The «arrow guide»¹⁴³ and the arrowhead should be placed on the back of the thumb. The thumb should be in front of the ear so that the drawing is done in a straight fashion. If possible you should draw the arrow guide on the middle finger parallel to the shoulders so that the shoulder is parallel to the middle finger. But, the arrow guide is on the back of the thumb. The drawing should be done in front of the ear. The distance between the middle finger and the thumb is similar to the distance between the shoulder to the chin.¹⁴⁴

Chapter: The art of drawing the bow consists of five things. *First*, keeping the bow straight. *Second*, drawing the bow in a straight line. *Third*, drawing evenly. *Fourth*, drawing. *Fifth*, drawing well. God knows all.

¹³⁷ In this case, drawing until the thumb ring is in front of the earlobe, is a measure of draw length. Taken together, the position of the thumb ring in front of the earlobe sets both the length and the height of the draw.

¹³⁸ *tirande* تیر عندہ. This is probably an alternate name for the arrow pass, from the Arabic «عندہ», meaning near and the word *tir* for arrow in Persian.

¹³⁹ This means that there is no part of the arrow sticking out in front of the bow because it is totally enclosed between the side of the grip and the drawn bowstring.

¹⁴⁰ *Malek al-Muluk* ملك الملوك: It means «King of Kings» which is also used to refer to God.

¹⁴¹ *tiq-e derami* تیغ درمی. This could mean that the point is drawn inside, that is overdrawn inside the bow.

¹⁴² *robudan* روبودن.

¹⁴³ *majrā-ye tir* مجری تیر.

¹⁴⁴ This section is capable of misunderstanding, but is actually quite clear. Firstly, it is important to realize that the «arrow guide» mentioned is not a device, but the part of the hand that the arrow is guided over. Secondly, this description only makes sense of the grasp on the bow grip is the kind called *čangal-e bāz* (hawk's claw grasp). In this grasp, the index finger is reserved behind the back of the grip while the arrow rests on the base of the thumb and passes over the middle finger. Thirdly the classification of the injuries can be related to what the Arabs call the lesser (*bidāyah* بدایه), the standard (*kifāyah* کفایه) and the greater (*nihāyah* نهاییه) draws. The farther the arrowhead moves inward from the back of the grip, the larger is the potential injury if something goes wrong. Fourthly, the actual draw length is achieved when arrowhead reaches the back of the thumb. Fifthly, the set of measurements is meant to reinforce that the posture should be balanced and the arrow held level.

PART TWELVE: ABOUT «RELEASING THE ARROW»¹⁴⁵

You should respect four prerequisites to release the arrow properly. The *first* prerequisite is to straighten the index finger fast so that your index finger is not injured and to hold the thumb in its own place so that in twisting¹⁴⁶ the top of the hand is in the way it should be.¹⁴⁷ With straightening the index finger in front of the small, ring and middle fingers, you should open [the lock]. *Second* prerequisite is that you should open the thumb rounded¹⁴⁸ and open from the left so that the width of the thumb does not strike the arrow nock. When you release the arrow, the thumb nail should face the ground and if the index finger points to the sky, you will be safer.¹⁴⁹ There are two advantages for the release: One is that the elbow should remain straight and neither go up nor down.¹⁵⁰ The other is that the arrow which is released this way causes severe injuries because of releasing in a rounded way the thumb does not get out of the thumb ring if the bowstring strikes the thumb ring.¹⁵¹ The *third* prerequisite is that you should not release the thumb in a way that you remain safe and the wound caused by the arrow is more severe. You should release the thumb in a way that you remain safe and the wound caused by the arrow is more severe. The *Fourth* prerequisite means that upon drawing you should not get out. They say that you should pull back a bit and then release fast. This is done in a way that you should wait a bit between drawing and releasing so a difference is created between the drawing and releasing. You should hesitate a bit by one and two based on the weight of *faulan*¹⁵² and add them.¹⁵³ The reason is to slow down [the draw] so that if upon drawing there is a mistake in aiming, you can adjust your aiming. The other thing is what your intention is during aiming so that when you release the arrow, you can bring it in its original place. You should know that the basic principle of releasing the arrow is that you should release freely. All should be done in the same manner and pulling the thumb ring so that shooting the arrowhead will be always from the same place so that it hits the target. If it is not done this way, it will surely not hit the target. Aiming means that if you pierce the top of the thumb with a needle upon releasing the arrow so a blood drop falls down, after you shoot ten arrows correctly, ten blood drops will fall on the same place so that pulling the thumb ring is done in the same way so that shooting will be the same. You should know that there are *ten* mistakes in releasing the arrow: *First*, you do not draw freely. *Second*, when the thumb is hit. *Third*, you release the arrow in a way that it strikes the thumb ring. *Fourth*, when you twist the thumb ring from the left and the right side of the arrow.¹⁵⁴ *Fifth*, when you release [the arrow] too early. *Sixth*, when you open the thumb ring not evenly. *Seventh*, when you throw the top of the right arm afar and this is called «flying sparrows»¹⁵⁵. *Eight*, when upon releasing, you open the small, ring and middle fingers.¹⁵⁶ *Ninth*, when you lower the elbow. *Tenth*, when you shoot a bit to the left to shoot at the higher

¹⁴⁵ گشادن تیر *gošādan tir*.

¹⁴⁶ گردانیدن *gardānidan*.

¹⁴⁷ This refers to rotating the hand about the axis of the thumb to clear the index finger from the path of the string.

¹⁴⁸ گرد *gerd*.

¹⁴⁹ This is consistent with rotating the hand as mentioned above.

¹⁵⁰ This ensures that the release is consistent.

¹⁵¹ This argues against the forceful straightening of the thumb, mainly because the thumb ring can be struck by the string if a release is performed badly.

¹⁵² *faulan* فاعولن; it is used to measure poems.

¹⁵³ The comment about drawing and not getting out refers to avoiding premature follow through.

¹⁵⁴ This is twisting while drawing as opposed to a twisted release.

¹⁵⁵ گنجشکپرانیدن *gonješḵ parānidan*.

¹⁵⁶ Though it is usually acceptable to open the middle finger on release, at least the other two should be closed. The reason is to avoid prematurely weakening of the lock.

level. When you shoot at the right and the left sides you should release the arrow in a way as described and you should not make any of these mistakes and God knows all.

PART THIRTEEN: ABOUT EXITING THE BOW

You should know that the nature of exiting the bow is to exit from the elbow. The reason is because you should draw the bow from the elbow so that you should exit the bow also from the elbow. You can reach this by holding the upper arm firmly and pull the elbow back so that the side of the body is opened. Upon releasing, you should make sure that from grasping the bow grip until releasing the thumb, everything is straight and firm so that if a man receives the wound caused by your elbow, he gets it with full force. There should be no mistakes in the left arm so that your elbow has the full effect. By releasing the thumb, the left gets out a bit, so that it [arrow] gets out of the bow and the arms are in the correct position. The sign for the right position of the right elbow is that you open your chest wide so that the chest is opened. Because placing the elbow in the right position is reached by widening the chest. Some say that the left gets out so that by placing the elbow, the right shoulder gets in line with the left shoulder. There should be an opening between these two shoulders so that even if you pull back ten elbows, the elbows do not go to other place. It means that in this position, the elbow is straight until the bow grip. This will put strength on the left and it [arrow] is released from the left. When you find out about this, you should release in the way as indicated. This is a fact and truth. You should know that the arrow should be released from the bow in a straight way so that there will be no mistakes and the arrow flies in a clean way. The mistakes of exiting¹⁵⁷ are the same mistakes of releasing. For shooting the arrow, one should think about the «exiting the bow»¹⁵⁸, «releasing the arrow»¹⁵⁹ and «placing the elbow»¹⁶⁰. All are achieved in one way and all should be done correctly and there is no way out. For the arrow and shooting the *bus*¹⁶¹ they should be straightened so that they become obvious.¹⁶²

PART FOURTEEN: ABOUT KNOWING THE BOW

You should know that the nature of the bow is based on three principles: One is straightness¹⁶³, second is smoothness¹⁶⁴ and third is speed¹⁶⁵. But its main principle is its straightness as the main principle for everything is straightness and anything where the principle of straightness does not apply to it and is curved is compared to a bow. But the bow is curved and does not have straightness. But you should know that the straightness of a bow is due to two other things. *First* «different bow parts»¹⁶⁶ should be attached to each other in a straight manner.

¹⁵⁷ *birun* بیرون.

¹⁵⁸ *birun āmadan az kamān* بیرون آمدن از کمان.

¹⁵⁹ *tir gošādan* تیرگشادن.

¹⁶⁰ *merfaq gozārdan* مرفق گذاردن.

¹⁶¹ بوس.

¹⁶² This section repeatedly emphasizes the importance of a smooth release and follow-through. The position of the right elbow is critical and its movement in a straight line is required for the strength and consistency of the shot. The final parts of this movement originate in the shoulders by bringing the shoulder blades together.

¹⁶³ *rāstī* راستی.

¹⁶⁴ *hamvāri* همواری.

¹⁶⁵ *tizi* تیزی.

¹⁶⁶ *vaslehā-ye kamān* وصله های کمان.

Because if each attached part is tilted as long as the bow has that tilted part, the bow itself will be tilted (bent). Even you straighten that part with fire, there is no trust in it because when it gets cold, it becomes tilted again because its nature is tilted. When the attachments and the parts are attached in a straight manner from the beginning, the bow will be straight. Even if due to the power of the tendons, the natural glue and resting¹⁶⁷, the bow becomes tilted, you can straighten it with fire. The sign of the straightness of the bow is when the bow is strung and you look at the bow, the middle of the bowstring is placed in the middle of the bow and everything is straight because all attached parts of the bow are straight. *Second* the bow arms should be straightened accordingly because if they are longer or shorter as required, the bow is deficient.¹⁶⁸ Its deficiency could be because its lower arm is longer, it will move out more than required upon shooting. If the upper bow arm is longer, it will move out more and the arrow will be shot upwards. If both of them are straightened in the same manner, these deficiencies will not be there. That bow can be trusted. You should know that the lower bow arm and higher bow ear are shortened according to the excess¹⁶⁹ so that the power of the bow is not more on one side compared to the other. The guide¹⁷⁰ of the arrow on the «arrow pass»¹⁷¹ should be in way that the arrow nock is within the power of the bow and the arrowhead is in the middle of the top of the bow. So that shooting the arrow from the bow is done with a «long guide»¹⁷² as it should be. The right sign is that to nock the arrow, the arrowhead is between the two *farte* parallel to the arrow nock. You should know that the middle of everything is the softest spot of it and the middle of the bow is the place of the power of the bow and this is a fact. The masters consider it as a wise principle and there is no way but being aware of this.

The second principle is the principle of the smoothness of the bow. You should know that the smoothness of a bow is due to *two* things. One means that one bow arm should not be thicker and the other narrower and thinner and other way round so one dominates the other and causes deficiencies. In the same manner, the wood, horn and tendons should be placed in a bow that none dominates the other. The reason is that the resistance of a bow is due to its wood. Its stability is due to tendons. Shooting the arrow is due to the horn. If the wood dominates the other two, the bow is deficient because although the bow is resistant, upon drawing, the tendons will be endangered and upon releasing, the horn will be in danger. If the horn and the wood dominate, the bow becomes tilted. You should know if the horn is weak from one side, the bow becomes tilted. If the tendons dominate the horn and the wood, the bow is more stable, but the bow will be without power due to the power of the tendons. If all three are used accordingly, the bow can be trusted. You should know this as God willing.

Third principle is about the speed¹⁷³ of the bow. The speed of a bow depends on *five* things: *first* the wood, *second* the horn¹⁷⁴, *third* the tendons¹⁷⁵, *fourth* the «natural glue»¹⁷⁶ and *fifth* «resting/storing»¹⁷⁷. The speed of the wood depends on *two* things: One on the «bending sec-

¹⁶⁷ *āsāyeš* آسایش.

¹⁶⁸ This does not appear to refer to the physical length of the limb, but to the brace height of the limb above its portion of string. The brace height will be less on the limb that is stronger. This is not the absolute strength of the limb but the condition it is in immediately after bracing. However, the method of describing this distortion is not direct. The lower braced limb looks longer because it is more straightened out.

¹⁶⁹ *farte* فرطه. It is Arabic for excess or overabundance.

¹⁷⁰ *majrā* مجرى. It is the guide or channel for the arrow formed by the thumb and the side of the grip of the bow.

¹⁷¹ *deyme* دیمه.

¹⁷² *derāz-majrā* درازمجرى.

¹⁷³ *tīzi* تیزی.

¹⁷⁴ *sar* سرو. This usually means «cedar». But this word also means «horn» which is the case here.

¹⁷⁵ *pey* پی.

¹⁷⁶ *serišom* سریشم.

¹⁷⁷ *āsāyeš* آسایش.

tions»¹⁷⁸ of the bow and the other on the nature of the bow handle. The speed which depends on the bending section means that the bending section should be made from good wood and made from the same «tree branch»¹⁷⁹ so that the bow arms harmonize each other. The speed which depends on the bow grip depends on *three* things: *First* attaching a bow grip should be done like a ladle¹⁸⁰. *Next* is that the bow handle should be exactly in the middle not up and down. *Third*, it should be four-sided. Anytime when all these three prerequisites are in a bow, that bow will be fast because upon drawing, it will get inside. You should know when the bow grip is placed upwards, it will have *two* advantages and *two* deficiencies. The advantages are that you can aim well with it and it is fast. Its two deficiencies are that it disperses the arrow and if its archer is in need, it has many dangers as the bow handle is placed higher. A bow with a handle that is placed lower has *two* advantages and *two* deficiencies. The advantages are that it can be drawn better and the other is that it is safer. Its deficiencies are that it does not look good and its arrow flies in a crude way. The bow which has a handle placed in the middle has *three* advantages: *First*, it looks good. *The other* is that it draws very well as it is four-sided.¹⁸¹ *The third* is that its arrow flies fast. The masters have chosen this bow which has its bow handle placed in the middle and a bow handle which is four-sided. If the bow handle is round and stable, it is safe but it will disperse the arrows. The four-sided bow handle is dangerous and not safe when the bowstring breaks as its arrow pass *tar 'ande*¹⁸² jumps and breaks. And upon drawing, it gets out [of position]. If it is the «shoulder of the bow»¹⁸³, it is better. This is the bow of warriors. It is straight and proper because of *two* advantages: *One* is because it is smoother and the *other* because it is more stable and safer. And upon drawing it does not get out. The speed which is based on the horn depends on *three* things. *First* on the day of making the bow, the horn should not be degraded [by age] neither should it be fresh as both will cause deficiencies. *Second* in cutting and mounting the horn parts, they should be dry. *Third*, the horn parts should be from the inner parts of the «curves of the bow on the face close to its ends»¹⁸⁴. Within the curves of the bow on the face close to its ends, there are three pieces of horn which extend to them. These pieces of horn are the best quality horn. The speed which depends on the tendon requires that the tendon layer is made of «cattle tendon»¹⁸⁵. Together with the proper horn, they will make the bow of warriors. The speed of the bow also depends on the «fish glue»¹⁸⁶. The bigger and fatter the fish is, the better sticking quality does the fish glue have. The sign of good natural glue is that it is whitish and its layers are better and transparent similar to amber so that you can look from one side to the other. To heat natural glue after tearing the pieces up, first you should throw it in water so that it becomes soft and its rigidity reduces. The container holding the natural glue should not be full of water and once on the fire, it should not be stirred so much that it becomes white and starts to boil. You should do this as required

¹⁷⁸ *pilte* پیلته. This might be a synonym for *xāne*, meaning in this context the bending section of the limbs.

¹⁷⁹ *šāx-e deraxt* شاخدرخت.

¹⁸⁰ *kafče* کفچه means «ladle» but this as a metaphor for the shape of a bow handle is obscure as it is sometimes used to describe the shape of a cobra's hood, it is clear what the author means. The grip area of Persian bows conforms to the standard Middle Eastern design: it is rounded on the belly, ridged on the back and flat on the sides. But the *Lexicon of Jahāngiri* says that *kafče* refers to a type of snake with a head resembling a «ladle» (see the *Lexicon of Dehxodā*). This might also refer to a local type of ladle with a handle spliced into the bowl. This would have to be very strong to work.

¹⁸¹ Four sided might mean that has a rectangular cross section rather than «of square cross section». This would mean that it was not as likely to turn in the hand.

¹⁸² *tir 'ande* تر عنده. It also means «near the arrow».

¹⁸³ *šānegun* شانهگون. The discussion may be about a bow with a clear bend below the ear. In Turkish bows, a thinning at the *kasān eye* (*kasān gözü*) caused the war bow to retain more reflex in this position and also to have a smoother draw.

¹⁸⁴ The *Digital Lexicon of Dehxodā* states that *zāq* زاغ means the «horn on curve of the bow close to its ends».

¹⁸⁵ *pey-e gāv* پیگاو.

¹⁸⁶ *serišom-e māhi* سریشوماهی.

and you should neither boil nor stir it a lot as this will reduce its [sticking] power. If you heat natural glue as indicated, it will be very good. Speed, which depends on resting, depends on two factors: one on the «curved bow»¹⁸⁷ and the *other* on the archer. The one, which depends on the curvature of the bow, means that the bow maker adds tendon to the bow and lets it dry completely. So that if they add reflex¹⁸⁸ to it, the tendons shrink day by day compared to *anjani* where the speed of the bow is powerless due to the shortness of the bow. They make sure that the bow completely dries out by storing. This bow is very fast and will never be crooked and blind and will always keep its [proper] shape. But before placing *anjani*, they draw the bow and heat it on fire and then place *anjani* on it. That bow will stay very hard and will not bend. But the one which is without power and *anjani* is placed on it will be bent in two places. The resting which depends on the archer means that they string the bow and let it rest before using it. If during shooting it is either *qomi*¹⁸⁹ or very warm, they unstring the bow so that its speed does not decrease. They say that upon shooting, the range of the bow is reduced by one pace. In the same manner as by shooting a bow, its range decreases, by resting it, its range increases again by the same measure. Archers should be aware of this.

Chapter: You should know that the art of the bow, and its advantage and purpose are that it fits the man. Agreement with the bow means that the man should be able to draw the bow. Power over the bow is of different kinds. Some have said that power over the bow means that you should be able to draw the bow with the index finger with ease so that, if there is an arrow in it, it will be fully drawn in the bow. But this is the statement of some. The reality is that the power over the bow means that you should be able to draw the bow with an arrow as long as the bow handle matches the bow and another man places the palm of his hand on the back of the bow handle, you will still be able to keep the bow drawn. So that if another man shoots ten arrows well not with haste and fast, you should still not moan¹⁹⁰ and the arrowhead should leave no traces on the hand of the man [who keeps his hand on the back of your bow handle]. This bow fits you and is proper for you. The advantage of having power over the bow is that during *xabak*¹⁹¹, your enemy keeps covering himself, either with a shield or something else. You should keep the bow drawn until the arrow becomes heavier. Even if you shoot heavier arrowheads, the arrow should fit the bow so that the bow gains speed. Another thing is that, if you shoot arrows with a weaker bow, your arms get acquainted with archery and you become proficient and God knows all.

Chapter: You should know that if one bow arm¹⁹² dominates the other a little during shooting and it is not improved by heating, but you have no other way to shoot with it, to string the bow, you should make sure that the bow is strung straight. You do it in a way that if the upper bow arm dominates, you should place the «nape place»¹⁹³ of the bow on your feet to string the bow. If the lower bow arm dominates, you should place the «excessive part»¹⁹⁴ of the bow on your feet to string the bow in a straight way. If the bow is straight itself, you should bring the «landing place»¹⁹⁵ of the bow on the feet so that the bow can be strung in a straight way. But if you have already strung a bow and only then find out about this, you should pull the bow in a

¹⁸⁷ *kamān-e kaj* کمان کز.

¹⁸⁸ *anjani* عنجنی. This might be a Persian description of *tepeliks* or *barshak*. In Arabic it can mean slope or inclination, but it might simply mean «reflex».

¹⁸⁹ قومی.

¹⁹⁰ *nafir kešidan* نفیر کشیدن.

¹⁹¹ *xabak* خبک.

¹⁹² *xāne* خانه.

¹⁹³ *qafāgāh* قفاگاه.

¹⁹⁴ *fartāgāh* فرطگاه. It means «nocking point» but in this case it may mean the «excessive part».

¹⁹⁵ *āvardgāh* آوردگاه.

way that by drawing the bow it becomes straight. This is done in the way that, if the upper bow arm dominates, you should bring the foot of the bow a bit forward so that upon drawing a bit of power is transferred to the lower bow arm. If the lower bow arm dominates, you should place power on the foot of the bow a bit so that the bow is drawn in a slightly straight manner. If the bow is «four nocked»¹⁹⁶ and the lower bow arm dominates, you should place the bowstring on the «outer nock»¹⁹⁷ on lower bow ear and *par*¹⁹⁸ of lower bow ear and on higher bow grip. If the lower bow arm dominates, it is the opposite of the higher bow arm. You should know that a «bow with four nocks»¹⁹⁹ has four advantages. It means that if a bow arm dominates, you should know how to string a bow. They have said that if a bowstring is longer, you place the bowstrings on the «outer nocks»²⁰⁰. You should know how to string a bow as has been described before. *Third*, if the bowstring is short the bowstring is placed on «inner nocks»²⁰¹. *Fourth*, if the bow is a bit twisted, you place it on the outer nocks. If your bow is softer, you place it on the inner nocks.

Chapter: You should know that the food of a bow is fire. The fire should not have a decaying effect and a decaying effect will lead to a breakage. They have said that a bow should be placed on fire [heated] properly every day. You should know that the main principle of heating a bow means that a bow requires heating if one part becomes defective. When the bow requires heating it means that one bow arm dominates the other. In some bows one bow arm dominates the other which causes problems. For an archer, there are no other ways except knowing these things.

PART FIFTEEN; ABOUT KNOWING DIFFERENT TYPES OF BOWSTRING

You should know that knowing the bowstring consists of three chapters. *Chapter*: The discussion is about which hide and from which part [of the animal's body] is suitable to make the bowstring. Which type of the hide is better in summer and which type is better in winter. You should know that the suitable types of hide are of three types: One is the hide of «roe deer»²⁰², the other is the hide of ibex²⁰³. But the roe deer's hide is better in all times. Roe deer is a type of animal which resembles a deer but it is bigger than a deer and smaller than a sheep. But in winter, the stag²⁰⁴ [hide] is better and in summer the bowstring made of ibex is better. There-

¹⁹⁶ *čāhrfart* چهار فرط. There are two common ways for a bow to have four nocks: 1) a bow can have two nocks on each tip, one below the other. This is done for two separate reasons. One is to enable a very strong bow to be strung by a bow stronger that fits in the two outer nocks while the real bowstring is slid onto the two inner nocks. This is sometimes found on composite crossbow laths. The other of the reasons is that in areas of great seasonal variation of temperatures the bow's strength varies. The two inner nocks are used when it is weaker and the two outer nocks are used when it is stronger. Using the inner nocks reduces its draw length. 2) The other reason is when the limbs are bifurcated. In this case each limb has two separate tips. The reason why people made bows like this is obscure. It may be to demonstrate the skill of the bowyer or the strength of the owner. This idea is ancient since such a bow was found in the tomb of Tutankhamen. Another (with six limbs, three up and three down) was deposited in the church at Svaneti in Georgia. There are others in the Topkapi Museum in Istanbul.

¹⁹⁷ *fart-e zebarin* فرط زبرین.

¹⁹⁸ *par* پَر.

¹⁹⁹ *kamān-e čāhrfart* کمان چهار فرط.

²⁰⁰ *farthāye zebarin* فرطهائزبرین.

²⁰¹ *farthāye zirin* فرطهائزبرین.

²⁰² *yahmur* یحmur. The *Digital Lexicon of Dehxodā* says that *yahmur* is «onager». But usually, an onager is *gurxar kūčak* گورخر کوچک, while in Arabic *yahmur* یحmur means «roe deer».

²⁰³ *boz-e kuhi* بزکوهی; here we are given the material a rawhide string should be made from. The implication is that wild animals produce better rawhide than domestic animals.

²⁰⁴ *gavazn* گوزن.

fore, if he makes a bowstring made of ibex in summer, it gets strong. Because when in winter it gets moist, it contracts, therefore, they do not make it in winter. They make bowstrings made of ibex hide when it gets wet in winter as it gets better in that state. In summer, this type of hide remains the same. You should know that the bowstring which is made from the back of an ibex with the width of three bowstrings from the left is good because the skin on that area is much harder and more even.²⁰⁵

Second chapter: This discussion is about the quality of bowstrings.

You should know that there are *three* prerequisites for the quality of bowstrings which you need to follow so the art of bowstrings is respected. *First*, the hide of the bowstring should be made from that place [of the body of the animal] which has been mentioned before. *Second* the hide should be evenly thick so one side is not thicker than the other so that upon twisting when the force of the bow is placed on it, the string is not spoiled and remains in its original state. The *third* prerequisite is that the bowstring should neither be thick nor thin otherwise it will be spoiled. When it is thin its weakness is that when the bow's power is applied to the string there are *two* dangers and the bow can also break.²⁰⁶ If the bowstring is thick, *three* mistakes may occur. *First*, the bow will be useless. *Second*, the arrow will not gain speed. *Third* the arrow will go astray and not fly well.

Third chapter: It is about making knots.

You should know that there are *three* prerequisites for making knots so that the knots are correct. The *first* prerequisite is that when making a knot, the bowstring should not be dry and it should not be too wet. Because, if it is dry and the power of the bow is applied, the bowstring [tears] breaks. If the bowstring is very wet and the power of the bow is applied in a strung position, you should not shoot in that case. You should wait until the bowstring is dried, because if it is wet, it will become defective upon shooting an arrow. The second prerequisite is that the «lower loop»²⁰⁷ should be tied bigger than the «upper loop»²⁰⁸. This is done because if the lower loop is bigger, the head of the bow ear will come out [easier] more easily and the bow can be strung more easily. The lower loop should be made bigger so that the bow grip is stable and the arrow leaves the bow with speed. If the upper loop is bigger, the arrow will be lacking. The size of the bow ear is that, if there is a slot²⁰⁹, it will come off the bow ear easily compared to other bows. The size [of the loop] for warriors²¹⁰ is that the higher loop equals the lengths of some tops of the index finger so that the size of the bow ears and the difference between them is achieved. The *third* prerequisite is that you should make the loop in a way that the bowstring fits the bow properly and is not long. The bowstring should be placed on the bow in the middle of the upper «string knot rest»²¹¹ with the distance of three fingers. On the «seat of the grip»²¹², the bowstring should be placed in a way that the middle joint of the small finger is placed on *ande*²¹³ and the thumb.²¹⁴ The bowstring is on the head of the thumb if the handle of the bow is

²⁰⁵ This could mean three bowstring widths from the center of the spine or it could be a misunderstanding for making the bowstring from a piece of hide three times the width of the finished bowstring.

²⁰⁶ This might be that the string might break, the arrow may fall off and the bow could break as a result of either.

²⁰⁷ *halqe-ye zirin* حلقه‌زیرین.

²⁰⁸ *halqe-ye zebarin* حلقه‌زبرین.

²⁰⁹ *faraje* فرجه.

²¹⁰ *qāziyān* قازیان.

²¹¹ *čakāvegāh* چکاوگاه.

²¹² *qabzegāh* قابزه‌گاه.

²¹³ *عنده*. In Arabic it means «near».

²¹⁴ The following sentences might be referring to measuring the brace height from the head (tip) of the thumb to the middle joint of the small finger. This would be slightly less than a span, maybe 7 inches or 17.7 cm. Following my comment above, the middle joint of the thumb is placed on the grip near the arrow pass and the tip of the thumb is on the bow string.

in the middle. If the bow handle is placed higher, the place of the thumb will be higher. But we cannot explain how to make quality knots unless you can see it. And God knows all.

[Fourth] Chapter: You should know that the bowstring breaks in *four* places. *One* is the «place of the arrow nock»²¹⁵. The *next* is on the side of the loop. The *third* is from «nock place»²¹⁶. The *fourth* is in the middle of the place of the nock and the bow ear. But the one which shakes from «the place of the arrow nock» is the fault of the archer leading to the tear of the bowstring and upon drawing the arrow places much weight on the bowstring. The [behavior of the] arrow [in this case] also depends on the «twisting the bowstring»²¹⁷ if the bowstring was not twisted properly. The one from the side depends on stringing a long one when upon looping, the bowstring is dry or very wet. So when it is strung on the bow, it tears or the «loop maker»²¹⁸ is not a master in making loops. They often open and tie it so that the side of the loops become weakened, so when the power of the bow is applied, the bowstring breaks. But there is a case when the bowstring tears from the place of the bow grip diagonally. The reason is because of the bow handle when there are nocks²¹⁹ on the bow ears and its «upper part»²²⁰ of the bow grip breaks because the bowstring has slipped off the nocks [because of a defective loop]. The masters have said that a raven²²¹ is nicer and more beautiful on a tree meaning that on a bow they do not look good. The other depends on the archer when upon stringing the bow from the bow ears, it becomes weak and breaks because of the power of the bow. However, the bowstring which breaks from the nocks²²² and bow ears [is] does so because of the bow when one bow arm dominates the other. But the majority of cases [of breaking] is because the bowstring is not strung properly. If due to necessity, you need to use a torn bowstring to string a bow, the loop in the lower half should match the bow arm and you should know this.²²³

PART SIXTEEN: ABOUT KNOWING ARROWS, FLETCHING AND ARROWHEADS.

You should know that the discussion on arrows, fletching and arrowheads consists of five chapters. *The first chapter* is about different types of arrows. You should know that there are four profiles of arrows: one is «cow's tail»²²⁴, the other is «rat-tail»²²⁵, one is «barreled»²²⁶ and the other is secret²²⁷. The cow's tail is an arrow which has a thick shaft²²⁸ tapering towards its

²¹⁵ سوفارگاه *sufārgāh*.

²¹⁶ فرطهگاه *fartegāh*.

²¹⁷ زهتاب *zehtāb*.

²¹⁸ گرهبنده *gerehband*.

²¹⁹ زاغ *zāq*.

²²⁰ فرط *farz*.

²²¹ In Persian *zāq* زاغ means both «raven» and «nock».

²²² سوفارگاه *sufārgāh*.

²²³ This whole discussion of bowstring loops seems archaic. In the days of straight ended bows, it was common to have the lower loop larger and this was the loop slipped off the bow when unbracing. The upper loop was usually permanently attached to the upper ear. However some of the terminology suggest string bridges, which would be post-Mongol, so it is hard to see whether this is an old description included in a later work or an older work that has been updated.

²²⁴ *gāvdām* گاودام; according to the *Digital Lexicon of Dehxdā*, *gāvdām* گاودام (cow's tail) is any object which is wide on one side and narrow on the other and has a shape of a cone (cone-shaped).

²²⁵ موشدنبال *mušdonbāl*.

²²⁶ سیندار *sinedār*.

²²⁷ *sarāyen* سراین. Arabic for secret.

²²⁸ *sarv* سرو; *sarv* means «cedar» or «cypress» or cedar, materials for making arrow shafts. Here it is probably used to refer to the shaft in general.

nock²²⁹. It is stronger and thicker than any other type of arrows. It requires a «strong bow»²³⁰ [to shoot with], flies very fast and causes severe wounds. The rat-tail arrow has a different nature compared to the cow-tail arrow and in reality is thinner and lighter than any other type of arrows. It requires a «light bow» and flies fast. It cannot be seen by the enemy and causes severe wounds. If it is too far from «hitting the target»²³¹, the arrow will disperse. The reason is that upon the release, it becomes *farsiveh*²³². The barreled arrow is an arrow which its breast is bigger than other types of arrows. Its shape is based on a man's body. Its nock is made of horn and the neck of the nock resembles the neck of a man. The feathers represent the hands attached with «arrow fastening»²³³. It tapers towards the «place of the arrowhead»²³⁴. They say that it resembles a man because the head of the arrow is its nock. This arrow flies very fast, causes severe wounds and is hidden from the enemy. Shooting means that the distance, the target, the quality of the target, the number of *siyāq*²³⁵, the number of the paces of the distance meaning how many cubits²³⁶, and the number of hits against the target meaning how many arrows are required are clear. Among the archers participating, there should be two who are trustworthy. They draw lots and whatever name comes up has the first option to draw [the bow] with the arrow. They pick them up one by one to work out the turn of all his companions. In determining the companions [to shoot], they should not use the lot so that different people can do that and on one side the target is shot well and poorly on the other side. If the precondition says that they both have made a mistake before, they draw a lot and the person who gets the lot shoots first. Some have said that a mediator²³⁷ is needed so that the companions are not heart-broken. First «shooting away»²³⁸ is required as the Messenger, blessing of God be upon him, has said that each activity which is dangerous and one says the name of Dear and Almighty God in the beginning, that work will be completely done and come to a conclusion.

Chapter: You should know that the «earth mound»²³⁹ which you shoot at it is called a «width»²⁴⁰. The target is called the «aim»²⁴¹. The cover of the target is called the «top»²⁴². The «new moon»²⁴³ is called «target»²⁴⁴. The size of the target measures one hand and equals the size of the face of a man.

²²⁹ *sufārgāh* سوفارگاه.

²³⁰ *kamān saxt* کمان سخت.

²³¹ *esābat* اصابت.

²³² *farsiveh* فرسیوه.

²³³ *bast-e par* بستتیر.

²³⁴ *peykāngāh* پیکانگاه.

²³⁵ *siyāq* سباق. Sequence or context in Arabic. *Siyah* in Turkish means black, *Siyak* might mean without black and could refer marks on the target.

²³⁶ *arāš* ارش. According to the *Digital Lexicon of Dehxodā*, an *arāš* equals a distance from the tip of the fingers to the elbow tip.

²³⁷ *mohallel* محلل.

²³⁸ *rānd andāxtan* راندانداختن.

²³⁹ *tudeh xāk* تودمدخاک.

²⁴⁰ *arz* عرض.

²⁴¹ *hadaf* هدف.

²⁴² *rās* راس.

²⁴³ *māh-e no* ماهنو.

²⁴⁴ *raqa'a* رقععه. The *Digital Lexicon of Dehxodā* states that *raqa'a* means «target» or the «sound when the target is hit».

Chapter: You should know that hitting the target has different names such as «hitting the target»²⁴⁵, «the result»²⁴⁶, *havāseq*²⁴⁷, «tearing»²⁴⁸, *xāni*²⁴⁹ and «cunning/fraudulent»²⁵⁰.

Chapter: You should know that the meaning of «hitting the target»²⁵¹ is that in any of the ways that the arrow hits the target which are called hit²⁵². If the arrow strikes it, or the *raqa'a* or *haramdeh*²⁵³ and the meaning of «hitting outside the scoring area»²⁵⁴ is this. If an arrow hits the side and tears it, it does not count. If an arrow hits the target and it bounces because it hits a stone or a bone, that arrow counts.²⁵⁵ If there is no excuse and this is the fault of the archer, this arrow does not count. If they watch and the potential is not realized, they trust the word of the person who confirms the arrow counts. Or they stand on the side and shoot again.

Chapter: You should know that the meaning of «the arrow passing the target»²⁵⁶ is that it hits the target and passes through the target. But if the arrow goes through the target completely, this does not count as it does not fulfill the prerequisite of «puncturing»²⁵⁷.

Chapter: You should know that the meaning of «partial hit»²⁵⁸ is that the arrow hits the target and it does not go through it. If an arrow goes through its width, it counts because it fulfills the prerequisite of puncturing.

Chapter: You should know that some people made a mistake in the meaning of *xāni*²⁵⁹. Some say that *xāni* means that they shoot an arrow at the ground of the target. This involves getting hold of two arrows [placing them in the ground] and shooting another arrow between these two arrows. That arrow which is closer to the target counts.²⁶⁰ The principle of «trick» or «cunning»²⁶¹ is like the principle of *xāni*. This means that each arrow which lands on the right and left side of the paper²⁶² or below the paper. One half of it on the top it counts.²⁶³

Chapter: If they, in the middle of locking²⁶⁴, aim, or keep aiming higher or lower and add to or reduce one [archer] from the companions, one of the companions will decide to shoot, or will rely on the other to shoot adding or reducing the numbers or increasing or decreasing

²⁴⁵ اصابت *esābat*.

²⁴⁶ فرع *far'*.

²⁴⁷ حواسق.

²⁴⁸ *xāreq* خوارق and خارق; according to the *Digital Lexicon of Dehxodā*, *xāreq* means «tearing» or «an arrow which goes through the target».

²⁴⁹ خوانی.

²⁵⁰ فريب *farib*.

²⁵¹ اصابت *esābat*.

²⁵² *esābat*.

²⁵³ حرمده *haramdeh*.

²⁵⁴ فرع *far'*. The *Digital Lexicon of Dehxodā* states that *far'* means «result» or «a bow which is made of a branch». This is a word that can also mean offshoot or fork in this case probably «hit outside the scoring area».

²⁵⁵ This is a fault in the target not of the archer.

²⁵⁶ *xāreq* خارق. The *Digital Lexicon of Dehxodā* says that means «an arrow which passes the target».

²⁵⁷ خرق *xarq*. These seem to be words used in a technical sense. Piercing or puncturing the target in this context means to be lodged in the target as opposed to piercing through it and coming out the other side.

²⁵⁸ سوبق *sobaq*.

²⁵⁹ خوانی *xāni*.

²⁶⁰ This is similar to the Turkish *azmayış* category of competition, where two poles are erected and arrows are judged on the closeness to the area defined by the poles and the distance from the shooting line.

²⁶¹ فريب *farib*.

²⁶² کاغذ *kāqaz*.

²⁶³ This might be like the contest that Busbecq describes among the Turks where the object was to hit all around a target, while just touching it (Busbecq, 2012 (1881): 253). In the Turks case the target was a coin shot at short range while this might be a long range version with a piece of paper. The last sentence could mean that to score the arrow had to cut half its width into the edge of the paper.

²⁶⁴ عقد *aqd*. To form the lock, from the Arabic term for the arrangement of fingers using the index finger to lock the thumb.

the distance. The reason is that the locking is necessary. If in the middle of the locking, they rely on the bow of others once they have determined the bow, they will all shoot at the same place.²⁶⁵ The better method is that the archers make a line and you shoot your bow and your companion shoots after you so that it will be your turn again. But if the enemy shoots one after the other, it is better and advisable to determine who shoots first and not based on the turn in the line [of archers].²⁶⁶ For example, if after shooting the first arrow, the other has his turn and he does not know how to shoot [well] and this becomes evident during the locking, he will be rejected because of this mistake.²⁶⁷ Even if they «shoot stones»²⁶⁸, they should fit the bow.²⁶⁹ If someone locks and makes the condition that they shoot one or two days more, they should take a rest by eating or praying for example. If the number and the «split up of either the rounds or the prize»²⁷⁰ are determined, before determining them shooting is not accepted. If someone says that hitting the target is yours and ten short fast paces²⁷¹ are for you, but he will not shoot. Or for example he says that you should shoot in intervals or similar things this is acceptable. Because the archery is permissible and if your speech is permissible, repentance is unnecessary. If someone in the middle of locking stops shooting and starts to take a rest and do other obligations and it is done intentionally, they will get upset with you. If done unintentionally, they will forget about it. You should not abandon this practice and God knows all as it is a pious act.

4. CONCLUSION

This text has many detailed descriptions of correct practice. It also has a vocabulary that is not completely understood. While the parallels with other Persian manuals make it possible to guess the meanings of some words from the context and ideas that have been expressed, there are others that will need further research because of their obscurity. It is possible that some terms are local and may come from specific areas and could be in dialect. It is also possible that some words have been miscopied based on a similarity to other expressions in the text. Taking into account these difficulties, most of the text is clear and well within the fold of Persian manuscripts on archery and also in agreement with much Arab and Turkish practice. Some details from other manuals are made more comprehensible and new information like the different terminology for grasping the bow show how rich the variation of archery techniques was in Iran and its neighbors.

Discussions of the forms of arrows show that the basic profiles were known to the author and his understanding of their uses aligns with other authorities. The description of how to make rawhide bowstrings has some similarities with similar sections in *Arab Archery*, but

²⁶⁵ This seems to be referring to a competition where all the archers use one bow. This is described in the section of flight shooting in *Saracen Archery* (Latham & Paterson, 1970:105) where Taybugha (shooting with one bow and arrow) advises about which is better shooting first or second and how to make it more equal. In this section, companions might mean team mates whereas enemy means the opposition team.

²⁶⁶ This seems to be a discussion about what is the best way of organizing a competition when there are two teams. Should each archer shoot one after the other or should each team shoot as a group.

²⁶⁷ Competence in the process of locking the thumb on the bowstring would be a good indicator of the overall skill of the archer. It is a basic skill.

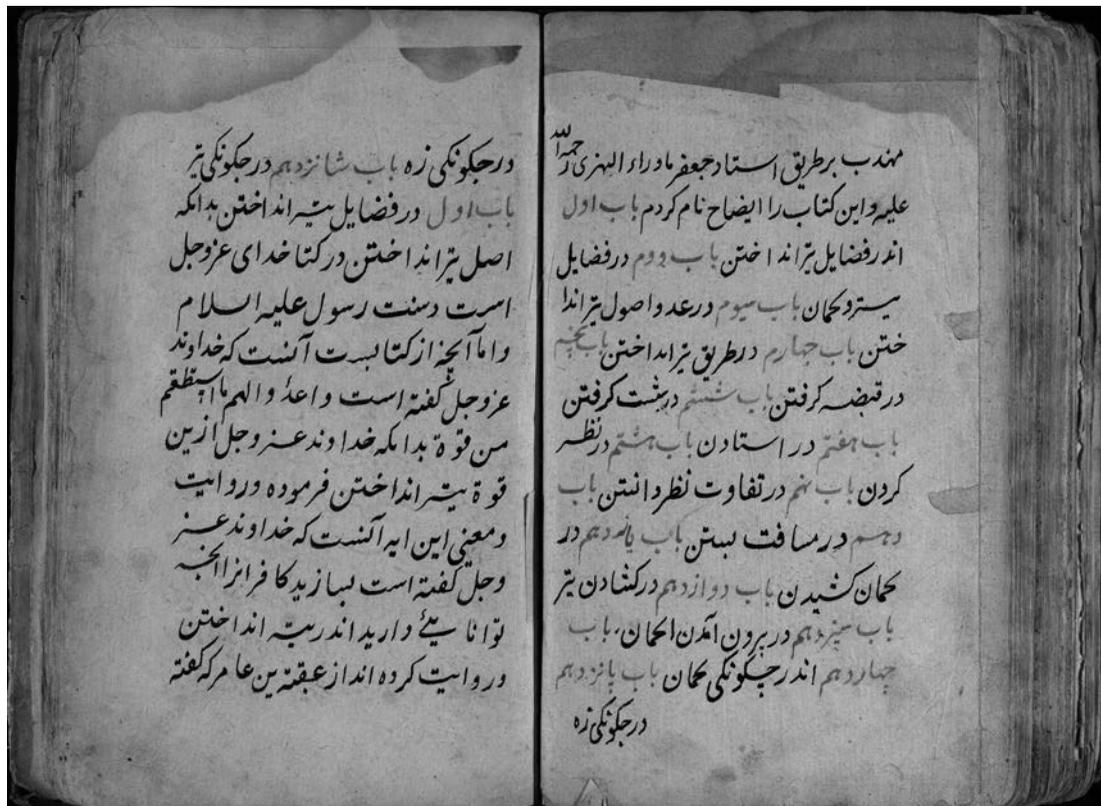
²⁶⁸ *sang andāxtan* سنگ انداختن

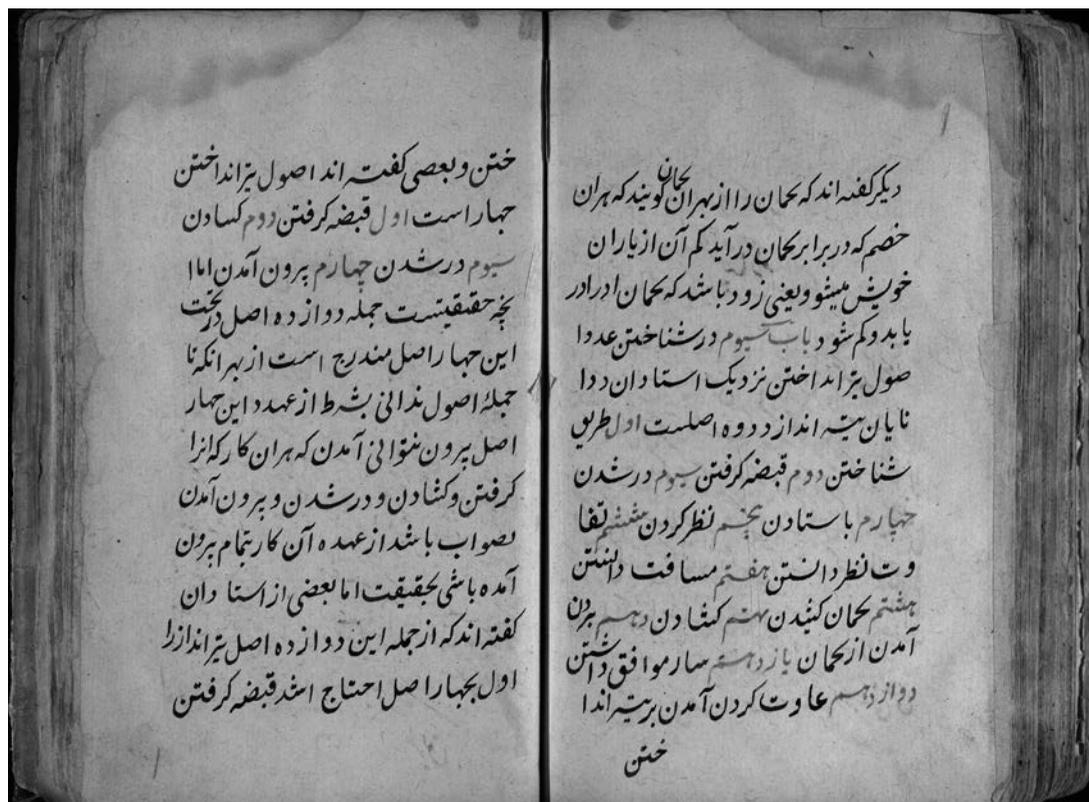
²⁶⁹ Too light a stone, or arrow, could damage the bow by leaving too much energy in it. Too heavy a one would not fly far. This seems to say under any circumstances use the appropriate missile.

²⁷⁰ *šaqā* شقا

²⁷¹ *deram* درم. The *Digital Lexicon of Dehxodā* says that *deram* means «short fast pace».

there are unique features. The shooting techniques are basically Persian with some variations so, whether this is an early text or a regional variation, it shows the strong continuity of the basic traditions. To some extent this could be related to basic physical restraints of shooting with a bow, but the nomenclature is too consistent to say that this manuscript is outside the general understanding of archery in Iran. On the other hand, the different interpretations of some terms and the uniqueness of other words show that this is an important contribution to the study of archery in Iran. In particular, the discussion of aiming, while very problematic because of the vocabulary, shows a fine analytical approach to the subject. Further discoveries, possibly in other fields, may explain some of the terms and enable a revision of some of the authors' conclusions. Such insights may also come from other languages or dialects of Persian that are not well known. It is also possible the exposure of these terms in this article may help other researchers build a better understanding.





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