Vol. 13(1), pp. 19-26, January-June 2021 DOI: 10.5897/AJHC2020.0493

Article Number: 6766B4266068

ISSN 2141-6672 Copyright ©2021

Author(s) retain the copyright of this article http://www.academicjournals.org/AJHC



African Journal of History and Culture

Full Length Research Paper

The knife of Bursa in Turkish culture: A historical and cultural study

Gültekin Erdal¹* and Ismet Gucuyener²

¹Design Department, Technical Sciences Vocational School, Bursa Uludağ Universty, Turkey. ²Electronics and Automation Department, Technical Sciences Vocational School, Bursa Uludağ Universty, Turkey.

Received 5 September 2020; Accepted 27 January 2021

Scientists who document the history of humanity 100 thousand years ago claim that the first knife made was of lighters 25 thousand years ago. The 75,000-year time difference between man and the first knife should be the process of transformation of human beings into homo sapiense. Sapiens have started to transfer their experiences which have the power to design the tools they use, to the new generation beyond logical instincts. Petroglyphs and lettering were not only carrying information but also lightening the tools and preventing them from being forgotten. Human beings have been able to communicate with each other in different geographies in different periods. With this virtue, they have been able to change their way of life by developing and processing the materials. In this process, the Turks, soldiers and those skilled in their time were the first to process iron during civilization, beyond the era of knives, swords, wedges. In Turks, instruments are not only functional but also aesthetic. This article deals with the history and development of knife, which is one of the most frequently used tools of humanity. Turk's knives, their place in Turkish culture, importance, types and etymological description have been discussed in this study. By comparing with today's knives, the place, historical development, and properties of the historical Bursa knife were determined. 93 Harbi and migratory knives that affected the historical Bursa knife and the law of firearms numbered 6136 in 1953 were examined and their effects on the Bursa knife were evaluated. In this respect, the article was concluded by evaluating the findings.

Key words: Turks culture, knife, history, Bursa, The 93 war.

INTRODUCTION

The knives used in the early periods of humanity were structurally quite different from the knives used today. At that period of time, blade was a structure with cutting edge and handle and a very functional hand tool; it was used for cutting, drilling or tearing processing. It was also used as a weapon. The use of knives as weapons is prehistoric times. The oldest known knife is made of flint (del Pilar Babot et al., 2013:3). The first metal blade is symmetrical double-edged arrowhead-like daggers made of copper. Similar to present-day knives, the first single-

back blade was made in the Bronze Age 4000 years ago (del Pilar Babot at al., 2013:3) (Figure 1). Researches involving various analytical microscopic and composition techniques have been conducted to identify the protected uses of these residues, which are defined as knives, over time (Hayward, 2016: 16). Research reveals the fact that knives are tools and weapons used in hunting, cooking and carpentry in human history (Knifecrimes, 2020). Harari suggests that, there are at least six different human species, when specifying

Corresponding author. E-mail: gultekinerdal@uludag.edu.tr.

Author(s) agree that this article remain permanently open access under the terms of the <u>Creative Commons Attribution</u> License 4.0 International License



Figure 1. The oldest known knives are made of flint, copper and iron. These knives were also used as weapons and were designed with a gun appearance.

Source: (Photograph:www.knifecrimes.org).

human history to 100000 years ago (Harari, 2017:21). In these species, Homo Neubertals and Homo Sapiens were able to use the tools. The ones described as humanoid had no human characteristics (Wikipedia E.T. 07.02.2019). Son insan türü olan, the last human type sapiens were social and were able to transfer their knowledge to next generations. This situation helped to preseve the soci-cultural importance of the tols. Harari defines culture as an immense variety of imaginary realities, and as a consequence of developing behavioural patterns; and defines unstoppable changes in cultures as history (Harari, 2017:49). As a consequence, history of knife needs to be defined as a culture too in this changing time.

Since his existence on earth, human beings have been engaging in hunting to meet his need for food. To meet his need for shelter he started to make cutting tools such as knives and spears (Birinci and Camci, 2016:495). First cutting tools were made by stone; after that they were made by bone, obsidian, copper iron and bronze (Figure 2). However, the blade appears to have iron structure (Hayward, 2016:16). Because iron and steel can be poured, they can be brought to the desired form by mold. The form can be beaten by reheating again and again, and made without failures. This new method not only made the knife to be a useful tool, but also an effective hunting and combat weapon. Petroglyphs explains that it has a built-in order, some routine work, show of power, status determination or continuity symbol. Hunting is,

above all, a sign of power. Hunting symbolizes power. It represents how to get power and how to stay in *power* (Alyılmaz, 2016:226). *In* the knife-making technique developed with humanity, more solid material has been used and it has become aesthetic besides its functionality.

MATERIALS AND METHODS

In this study, historical Bursa knives are examined, their features are revealed and the characteristic form and steel structure that differ from other knives are revealed. In this context, the Bursa knife museum inventories, photographs and knives in the museum were researched. Ottoman period miniatures, in which the Bursa knife is located, were examined; the blade forms were taken into consideration and structure of the steel cutting part was examined particularly. In light of all these investigations, the difference of the blade structure of the Bursa knife has been revealed and it has been proved that the 3V blade model is a characteristic of Bursa knives.

Development process of the knife

Definition of knife

Sanger argues that blades should be defined on the basis of both morphological and technological factors (Schneider, 1982: 126). Morphologically, the blade can identify the self-forming part or parts. Technologically, it covers not only the construction technique, but also the purpose of its construction. Because although we consider knives as a tool above all else, their inseparable



Figure 2. Examples of iron swords and knives of the hound. Lower Volga region. Source: Öğel (1978)

connections with human interests cannot be denied (Tirman, 2018, E.T. 07.06.2020). It is produced as a weapon today as in the past. Generally, knife is a hand tool that has a cutting part, and a handle that is used for grabbing it. As culture, according to kitchen and table manner it is civilization symbol that can reach hundreds of types, in variability of specifications of handle and cutting part. Knife as a belonging; it is an indispensable tool, which is foldable and can be carried in pocket if necessary by males; it has a cutting part with decorated handle used in the kitchen by females. As a history, it is a document that reflects the development and transformation of cutter weapon culture. As a belief; it is token of force and guard that is pictured on a tombstone, and buried with its owner. In literature, knife is the symbol of pain, suffering, longing, separation and honour; also in plastic arts is the symbol of power, heroism and leadership. In the future, the knife will only be the product of its functionality and a kitchen tool that technology cannot destroy. The fact that the knife came from the culture of the sword made it a weapon at the same time, and for many years it still has the appearance of a weapon. African launched knives are still a culture that lives with the appearance of weapons (McNaughton, 1970: 56). On the other hand, Turkish tribes that have the skilful masters and first handlers of iron did not see the knife as a weapon and did not store it in any sheath. Nevertheless, knife has become as diversified as possible in Turkish culture and has been made into different designs for different purpose. The Turks saw the knife as civilization, not as a weapon. They are usually small knives which can be carried particularly by women but for defence purposes. The knife is separated from the sword and similar weapons not only by its sharpness but also by its handle. The fact that the users of the knife are generally females made it lighter and decoreted.

Evolution of knife

Considering what the most important invention of humanity is, very few people can call it a knife. Because the knife has developed as a common need invention that has enabled humanity to survive. So much so that the knife has become an important weapon that has allowed the human to settle on top of the food chain. Without knives, our ancestors could not hunt, fish, collect food, build houses for themselves and even defend themselves (Author, 2017: E.T. 07.06.2020). The knife provided a safe living environment for humanity to settle, cultivate and new inventions, and opened the doors of civilization. About 1100 km long and 250 to 350 km wide in the Mediterranean Levant, many remnants of civilization in this rich life zone extending up to the Sinai peninsula from the Taurus Mountains on the southern side of Turkey have been found (Bar-Yosef, 1998: 159). The most important of these was the sickle blade residue (Figure 3). These inventions are important technological adaptations that play an important role in transition to

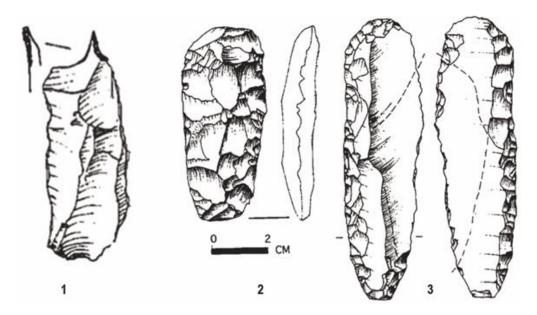


Figure 3. Highly carbonized barley, wheat, legumes and seeds of other plants were found in excavations in the Levantine region corridor. Tools and appliances used in the processing of these seeds were also abundant. (1) awl on the blade, (awl: a small pointed tool used to drill holes in the skin) (2) a tranched faced ax, (3) sickle blade. Source: Ofer Bar-Yosef.

agriculture (Goodale et at, 2010: 1192-3).

In particular, cutting tools based on blacksmithing were abundant with archaeological excavations, and documentations with pictures on many remain. Tombstones are quite rich in this regard. The tradition of building tombstone in the Göktürk State was in the form of a statue of the deceased. The male ones were called father stone and the female ones were called grandmother stone (Aslan, 2017: 1927). In father stone sculptures, it is seen that weapons such as swords, daggers and wedges have always been depicted (Figure 4). In 11 of the 13 stele stones in Hakkâri city center, a naked male dressed in a codpiece was depicted. They had a wide belt and always the same type of dagger on it 1 (Sevin, 2001: 504). One of the main elements of Turkish national culture is blacksmithing. The melting of the iron mountain in the Ergenekon epic and the establishment of seventy large bellows to melt this mountain indicate how old the art of blacksmithing in Turks is (Kaya, 2002: 9). In the period of Gokturk and Uighurs, we see that the Turkish mining art has been developed and that knives and swords are used as weapons and daily items.

"In the Göktürk period, on the Balball, males were depicted with knives and swords around their waist (Figure 5). Here, knives and swords are seen as a symbol of heroism and domination. Knifebearing figures were also seen in the Uighur frescoes. Bıçak, in the sources of Seljuk period Divan-ı Lügat-it Türk and Kutadgu Bilig were mentioned as a "biçek" and took important place in the culture of this period. In the time of Alaeddin Keykubat in Anatolia (1220-1237), Ahis, who ensured the security of the cities, had knives on their belts (Karpuz, 2014:?)."

In the Ottoman period, many knife making centers emerged in Anatolia. Some of these centers have preserved their importance until today. Bursa, Balıkesir, Yatağan, Afyon, Ankara, Kastamonu and Sürmene are some of these centers (Kapuz, 2014). In most of the mentioned centers, traditional knives were lost and defeated to technology. Bursa and Surmene knives, yet have not lost the war of

life, without breaking the essence of tradition and have managed to live with technology. The Ottomans had a strong army that needed strong weapons. Bursa, which was conquered in 1326, was not only the capital of the Ottoman Empire but also the capital of iron processing. Due to the large market created by the Ottoman army, it became important to create swords and wedges; and these weapons were given more space in the historical documents. This made Bursa the center of weapons production such as Yatağan, İstanbul and Filibe (Koca, 2005:187-8):

"Especially from the end of the 19th century, the production of special knives and hand tools, in which ingenuity or mastery came into prominence instead of the sword, became more important. Cutlery in Bursa started with a huge varieties such as yatagan which is like small sword, machete, saldırma which is like attacking knife, sword, wedge, dagger and continued for a long time. These kinds of cutting tools, which gradually became smaller after the Janissaries, were replaced by smaller wedges, pointed blades, then bread, tableware and fruit knives (Saraç, 2005: 949).

RESULTS AND DISCUSSION

Knife is an important tool for Turkish culture. It is used with different names in the daily life, poems, folk songs and descriptions of the Turks. In the 11th century, Kashgar Mahmoud described knife as "biçek"; while in a story of Ay-Toldu in Kutadgu Bilig, the following sentences are remarkable:

Bedük bir biçekig eligde tutar, (He holds a big knife in his hand)

Solunda bir acı ot, sağında şeker. (To the left is bitter castor, and to the right is sugar) (Ögel, 1978: 78).



Figure 4. The image of one of the human-shaped Hakkari tombstones containing depictions of ancient Turkish life and beliefs (mountain goat, deer, bengi water turt, etc.) (Van Müzesi, Cengiz Alyılmaz). The dagger embossing on their waists is remarkable. Source: Photograph: Veli Sevin.



Figure 5. Göktürk statues which have the goblet in the hands and the sword at around waist.

Source: Alyılmaz ((2019).

In some Uighur inscriptions, the word "biçek" is differentiated and written as "piçek". However, Ögel states that this spelling may be wrong, because it is only written in the Uighur writings to the west of China; while in the Uighur writings in the Turfan region it is written more as "biçak" word. On the other hand, Alyılmaz thinks that this spelling is not wrong. The 'b' and 'p' sounds are used frequently in Turkish dialects, while in some Uyghur regions 'p' is used in 'b'; and even in the same region they are used in both voices (Ayyılmaz, 2019, Röpörtaj).

In ancient written sources, sculptures and reliefs, there are many documents belonging to the Turkish sword. The most obvious reason for this is that sword is a weapon belonging to military and state administration. The Turks that were born as soldiers gave great importance to this weapon. However, the knife is an ordinary tool that is mostly used in daily work. In Turkish history, although knife was not that important as the sword, it was considered as a vehicle that was carried on by every Turk. In other words, the knife was not seen as a weapon, but it was only seen as an aid tool to daily needs (Ögel, 1978:91). As a matter of fact, although the handle of the sword was called 'balçak', the handle of knife was only called handle by Turks. This is because the handle can be the handle of anything. In spite of all these, in Turks, knife is highly diversified and named.

Kyrgyz Turks said that it is not the secret of the ox saddle and the sheath of kitchen knife (Ögel, 1978:99). The Turks believed that a weapon should have a sheath or guard. It is important to have a sheath rather than the size of the weapon. Sheath brings in personality and respect to a weapon. An owner that places his weapon in its sheath does not aim to attack, but indicates he is innocent. In Turks, the knife was not a means of attack; it was only a kitchen tool and therefore it had no sheath. Therefore, the separation of weapons and knives in the Turks has never been evaluated according to their dimensions. For example, meat cutting blades are quite large. Since it has not any sheath, it was considered as a kitchen tool, and not a dagger. Bahaeddin Ögel used quotes from Kasgarlı Mahmut to describe the types of knives in Turks. Kasgarli Mahmut called knife 'kezlik' in the penknife group; 'It is the little woman knife. 'Women hang it on their upper clothes', he said. In Turkish culture where only a special penknife for women is present, the knife is highly diversified, although it is not important. The rich type of knife is also a sign of rich Turkish cuisine.

The small group of knives in Turks is so rich that each has its own group names. In Anatolia, penknives are given names based on many old Turkish roots such as çaka, çakıcak, kezlik, kısma, kitleme, soya, yumuca (Ögel, 1978: 101). However, penknives are only the part of the group of small blades. Double knife (koş bıçak), curved blades (edgü or iygu), female blades (kezlik) and other penknives are the lower classes of small blades. For example, the line penknife is used for the production process of boot in Afyon; Istanbul's soybean knives that

can open and close are in the other knives group. The only difference between the soybean penknife and penknife is that it is called Albanian penknife today, having handles. The handles of the Albanian penknives were made of bones and horns, while the tree handles were used for soybean penknives. Another feature of the Albanian penknife handles is that they are light (Taş, 2013: 366).

Today, the most obvious features of the definition of the Bursa knife is shown to be sharp, the mouth of the blade is pointed. Ögel states that there is no such statement in the old Turks, because the word knife mouth is related to the sharpness or cutting of the knife. The old Turks used the word sharp knife (yitik biçek) to describe it (Ögel, 1978:101). With this statement, everything about the mouth of the knife is said. In other words, the sharpness of the knife in the Turks is not a feature; it is just its functionality. The sharpness of Bursa knife is that it can be maintained for a long time. This is related to tempering of the steel and thus gaining its mastery skill. From time to time, Bursa has been a center of forced migration for knife masters. Two important events caused many cutler to settle in Bursa from their own city and even from their homeland. The first and the most important one was the Battle 93. More than one million Ottoman citizens have become refugees in the Balkans and the Caucasus, and there have been giant migrations to Anatolia during the war and after the war (Wikipedia, E.T. 12.02.2014). In particular, knife masters migrated and settled in Bursa. The knife masters who brought innovation and vitality to Bursa knives by combining their culture with Bursa culture made important contributions in the creation of Bursa brand in knife production. For example, by making innovations in the ergonomic structure of the Bursa knife, they saved the Bursa knife from the image of the weapon between the sword and the wedge. However, some typological features of the Turkish sword are still visible on Bursa knives even today. Willow tongue, snake tongue, waist knives and knives called ears can be shown as examples (Kavaklı, 2007: 65). The immigrant Albanian knife masters introduced to the Bursa cutleries new folding knife like the Albanian knife. During the watering stage, migrant craftsmen, who met the chestnut coal grove, made significant improvements in the quenching process and increased the sharpness of the cutting part of knife. Another important factor in increasing the sharpness of the Bursa knife is the addition of the third V shape mouth to the high carbon steel. By this time, besides the V shape or two V shape from the sword, wedge and dagger tradition, a new V shape was added by migrant craftsmen to increase the sharpness of the knife as well as the identity of Bursa knife (Figure 6).

The second important development for Bursa and Bursa knives is the firearm law numbered 6136 which was issued in 1953. This law prohibited the construction and sale of corrugated, grooved knives and similar tools.

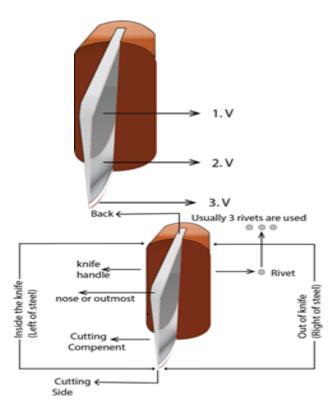


Figure 6. Typical sections of the historical Bursa Knife and the 3 V scheme.

The cutlers of Surmene were the most affected by this law. As a matter of fact, many of the masters engaged in this activity were forced to migrate to cities such as Istanbul, Bursa and Kocaeli (Doğanay and Çavuş, 2013: 52). Bursa, which has accepted immigrants for the second time with the law numbered 6136, continued to produce in line with the orders of the law, despite having a very difficult time. The biggest innovation brought by the law is the removal of grooves in the blade steel. With this law, Bursa blades were completely freed from the appearance of weapons and reached more than 150 species with its own typology. The rigid and iron structure component since its being specification, was replaced with a more flexible and sharp cutting component. This flexibility has been so successful that it has become the definition of the knife master and the Bursa knife. Therefore, the blade is not as heavy and bulky as it used to be; it has become lighter and more flexible. The new Bursa knife is more functional, ergonomic, elegant, diversified with the names that is called cheese-knife, bread-knife, vegetables-knife, butterknife, etc. and made its own models. These models have been so successful that the creative master of each model has started to produce branded knives by scraping his own name on the knife. These years, when the knife also started in the ornamentation period, enabled the master to achieve a different skill in giving water to steel. In fact, the expression that knife's water is the honor of the knife has been a kind of Hippocratic oath of Bursa knives.

The craftsman's abilities include: thinning of the back of the cutting component to the front tip, bringing together the handle junction point properly to the last end of the cutting component, connecting the cutting component with the handle at the junction point without errot, forming slits and cracks on the handle, and creating the knife sheath (Gülşen, 2014, interview). The year 1953, which was defined as a black year for the cutlers, was a new turning point for the Bursa knives, and radical steps were taken to pave the way for Bursa knives to be perfected. Even though the law no. 6136 has put cutleries into economic difficulties, it has been instrumental in the renewal of Bursa knives.

Turks have entered various cultural environments throughout their wide history and created civilizations of this new type of cultural environment. For this reason, there are Turkish examples of Chinese, Indian and Islamic civilizations. However, some elements of Turkish culture have not disappeared despite the changing environment of civilization (Ögel, 1978: 231).

There is an unregistered tradition almost everywhere in Anatolia. Bursa knives are just one of them. There was

no solid source about knife making in Bursa which has a history of 700 years. This situation makes academic studies and research difficult. There are two important milestones known only about Bursa knife making. Both seem to be a problem, but in fact, Bursa revived the production of knife. The first is the Battle 93. This war caused a great migration to Bursa. The contribution of the new Bursa cutlers to the Bursa knife making is undeniable. However, it cannot be said that immigrants brought knife to Bursa. The immigrants who settled in Bursa 140 years ago have made important contributions to the at least 700 years of Bursa cutlers and to establishing the identity of the Bursa knife.

The 1953 law was the second turning point for the Bursa cutleries. The law of banning the groove and gutter has jeopardised all cutleries in Turkey, has even been forced to migrate some cutleries. Sürmene cutlery is one of the most important centers of effect. Bursa cutleries also described this year as black year; they were very hard situation, they could not make production and sales and even they came to bankruptcy because the government made late payment for the knives they collected. However, even in this case, Bursa cutlery has managed to renew itself and was able to protect its brand. Such that the typology of Bursa knives has been reorganized and more functional and aesthetic knives have been produced. This revival, which continued until the 1990s, began to stagnate again with the expansion of fabrication and automation systems. Dependence on the steel used in the cutting component to the foreign countries such as France, Switzerland and Germany prevented the knife craftsmen from directly buying the steel. The fact that the intermediaries do not always sell quality steel forced the craftsman to buy waste steel most of the time. In the continuing process, the tendency of the knife masters to go for low-carbon sheet steels will continue to be an important problem for Bursa cutleries.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Alyılmaz C (2016). Gobu'stan'ın Gizemi (Kıpçaklar'a Giden Yol)(The Mystery of Gobu'stan (The Road to the Kipchaks)). Bitlis: Bitlis Eren Üniversitesi Yayınları, p. 226.
- Aslan AS (2017). "Stones speak": The form language of turkish tomb stones. International Journal of Turkish Literature Culture Education (TEKE) 6 (3):1923-1937.
- Author T (2017). The History of the Knife Throughout the Ages. https://www.theknifehub.com/history-of-knives
- Ayyılmaz C (2019). Bıçak İzi, Belgesel. (Bursa Line Tv, Röportaj) (Knife Mark, Documentary. (Bursa Line Tv, Interview).

- Birinci S, Camci A (2016). An example of traditional handicrafts that should be protected. Production of Sivas Knife). Marmara Geographical Journal (33):493-509.
- del Pilar Babot M, Hocsman S, Cattáneo GR (2013). Assessing the life history of projectile points/knives from the Middle Holocene of Argentina's Southern Puna. Quaternary International 287:3-19.
- Doğanay H, Ahmet Çavuş (2013). Geleneksel El Sanatlarına Bir Örnek: Sürmene Bıçağı Üretimi: An Example of Traditional Handicrafts: Production of Sürmene Knife. Doğu Coğrafya Dergisi 18(29):51-64.
- Goodale N, Otis H, Andrefsky Jr W, Kuijt I, Finlayson B, Bart K (2010). Sickle blade life-history and the transition to agriculture: an early Neolithic case study from Southwest Asia. Journal of Archaeological Science 37(6):1192-1201.
- Gülşen MK (2014). İsmini Dünyaya Duyuran Bursa Bıçakları ve Bıçakçıları (Bursa Knives and Knives, Announcing Their Name to the World, Interview). V. Beştan, Röportaj.
- Harari YN (2017). Hayvanlardan Tanrılara Sapiens (Hayvanlardan Tanrılara: Sapiens). İstanbul: Kolektif Kitap. 40. Baskı.
- Hayward T (2016). Knife. The culture, craft ans cult ofthe cook's Knife. London: Quadrille Publishing Pentagon House.
- Karpuz H (2014). Sürmene Bıçakçılığı (Sürmene Knife Making). http://surdovbisa.ticiz.com/n3162-surmene-bicakçiligi-bugunu
- Kavaklı M. (2007). Bursa Bıçakçılığı Tarihi, Bıçağın ABC'si ve Şeref Levhaları(Bursa Knife Making History, ABC of the Knife and Honor Plates). Bursa: Osmangazi Belediyesi Kültür Yayınları.
- Kaya DM (2002). Sivas'ta Bıçakçılık (Knife Making in Sivas). Sivas: Sivas İli Yayın Kültür ve Sanat Araştırma Vakfı Yayınları.
- Knifecrimes (2020). History of the Knife. http://www.knifecrimes.org.
- Koca HÇ (2005). Yatağan Kasabasında (Denizli Serinhisar) Ev Tipi İmalat Sanayinin Coğrafi Özellikleri (Geographical Features of Home Manufacturing Industry in Yatağan Town (Denizli - Serinhisar).
 Erzurum Atatürk Üniversitesi Doğu Coğrafya Dergisi, pp. 187-188.
- McNaughton PR (1970). The Throwing Knife in African History. UCLA James S. Coleman African Studies Center. African Arts 3 (2):54-89.
- Ögel B. (1978). Türk Kültür Tarihine Giriş (The Introduction of The Turkish Culture) IV. Ankara: T.C. Kültür Bakanlığı.
- Saraç HG (2005). Bursa Bıçakçılığının Bugünkü Durumu (The Current Status of the Bursa Knife Makers). Bursa Halk Kültürü, II. Bursa Halk Kültürü Sempozyumu Bildiri Kitapçığı, Bursa: Uludağ üniversitesi Kültür Sanat Kurulu Yayınları 3:949.
- Schneider F (1982). he Pelland and Moe site blades: Paleo-Indian culture history in the upper Midwest. Plains Anthropologist 27(96):125-135.
- Sevin VÖ (2001). Hakkari Taş Steller (Hakkari Stone Steller). Belleten 125 (243):501-517.
- Taş H (2013). Albanian Pocket Knife: A Symbol of Bursa. O. S. Editors içinde, the science and education at the beginning of the 21 st century İn Turkey. Sofia: ST Kliment Ohridski University Pres.
- Tirman S (2018). Dövüş ve Savaş Bıçaklarının Tarihi (History of Fighting and Combat Knives). https://hiconsumption.com/history-of-fighting-combat-knives
- Wikipedia (2014). 93 Harbi (The 93 war). http://tr.wikipedia.org/wiki/93_Harbi
- Wikipedia (2019). Hominid. Wikipedia. https://en.wikipedia.org/wiki/Hominini