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Research Article

The Chifte Kaval tradition in the Balkans: A comparative organological study of Bulgaria, North Macedonia and Kosovo

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Abstract

This study aims to comparatively examine the structural characteristics of chifte kaval examples from Bulgaria, North Macedonia, and Kosovo and to reveal the regional diversity of this musical instrument tradition. The research draws upon instruments documented during fieldwork, specimens preserved in museum collections, and relevant literature. Measurements from chifte kavals held in museum collections across Europe and the United States were compiled and compared, including overall length, bore diameter, external diameter, fingerhole arrangement, resonance holes, thumb-hole placement, and construction techniques. The findings indicate that the examined instruments range in length from 515 mm to 812 mm, while bore diameters vary between approximately 11.5 mm and 17 mm. North Macedonian examples made by the Ferati family exhibit a distinctive bore constriction of 14.75 mm near the blowing end, whereas a Kosovo specimen displays a pronounced distal-end restriction of 11.5 mm. Bulgarian examples from the Rhodope region are characterized by narrower bores, different fingerhole spacing patterns, and, in the Beslen specimen, an unusually wide interval between the third and fourth fingerholes. While the Kosovo and North Macedonian instruments share close similarities in morphology and decorative features, the Bulgarian examples demonstrate a distinct regional organological profile. The study further suggests that the construction of chifte kavals is shaped more by inherited craft knowledge and master-apprentice transmission than by standardized measurement systems. By documenting the structural diversity and regional characteristics of chifte kavals, this research contributes new data to the fields of organology and ethnomusicology.

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Introduction

Throughout the Balkans and Eastern Europe, into the Near, Middle and Far East, the Pacific Islands and in the New World among Native Peoples, the end-blown flute, without keys and in a variety of configurations is known to be (or have been) played. In the Balkans the long end-blown flute is known as “kaval” in Macedonian and Bulgarian; “fyell” in Albanian, and “dzamara” in Greek.

In three Balkan countries there has been a tradition of making kavals in pairs - kept in a single case or on a single double-stick holder - that two people may play and be in tune with each other. In Bulgaria these kavals are called “chifte kavali”. Though the word “chifte” in Turkish means “double” there does not seem to be a recent presence of paired kavals in Turkey. As well as Bulgaria, chifte kavals are found in Kosovo and North Macedonia. There is also evidence of chifte kavals having been made in Epiros, Greece, and Albania. This paper deals with chifte kavals found in Bulgaria, North Macedonia and Kosovo, based on travels in Bulgaria and an eight-month stay in what was the Socialist Republic of Macedonia, now known (to the dismay of Macedonians) as “North Macedonia”.

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Chifte kavals are traditionally made of one long piece of wood. The type of wood is European ash (Fraxinus excelsior), which is a light, but fairly hard wood. The walls of chifte kavals are frighteningly thin (approximately 2 mm); These instruments must be held on sticks or in a wooden case for protection. In the past the wood of the kaval was often covered with sheep intestine to keep it from splitting and/or developing small air leaks. New instruments' fingerholes would be cut through both the dried intestine and wood. Intestine coverings are found on both Kosovo and Bulgarian chifte kavals that otherwise share few visual design features.

The chifte kaval weighs almost nothing, in contrast to the single Bulgarian kaval, which is traditionally made in three parts, with thick walls, oxhorn joints (often plastic now), a heavier wood, and with a rim of oxhorn to blow across. In North Macedonia chifte kavals have been made both by ethnic Albanians and Slavic Macedonian artisans; in Kosovo by ethnic Albanians, and in Bulgaria by Bulgarian Muslims.

Chifte kavals are chromatic instruments, playing intervals simallar to half-tones, with the exception of the lowest interval, which resembles a whole tone. The "scaling" of the instrument, that is, the relationship of the distance between fingerholes, to the length from the blowing edge to the highest open fingerhole, determines whether the instrument tends to sound flat or sharp playing up the scale. As a folk instrument, it is listened to by an audience not concerned with intonation, including dancers, sheep and sheep dogs. When two shepherds play a set of chifte kavals together, say, in the Shar Mountains with a flock nearby, they will be perfectly in tune with each other. One person will play a melody while the other will play a drone. Given years of playing together, they will learn to take breaths alternately to avoid a sudden silence.

I have a longtime friend, a shepherd who lives near Brno in the Czech Republic, in a covered wagon. Having fallen in love with the sound of the kaval, he had one made, and wrote a few months ago telling me that for the first time his playing has been recognized by his sheep as a sign for them to come into the pen for the night. Some folks who, having played the silver concert flute for years, want to know what it feels like to play an instrument without the mediation of a mechanism, hence are drawn to the kaval.

I wrote about how chifte kavals are made, published in the journal *Ethnomusicology Online* (1998), taking note of the variety made by the Ferati family in the village of Arachinovo near Skopje, North Macedonia. In the article I stated that these paired kavals used to be played in Bulgaria, but to my limited knowledge they were no longer played today. A year after publication I received an e-mail from Bulgarian kaval player and teacher Lyuben Dosev, with a recent picture included of two Bulgarians, each holding one of a pair of chifte kavals. Lyuben wrote that I should not be too quick about stating there is no one left in Bulgaria who plays these instruments!

Aim of Study

The aim of this study is to examine the chifte kaval tradition found in Bulgaria, North Macedonia, and Kosovo from an organological perspective and to comparatively reveal the structural characteristics of these instruments. In addition, the study provides information on kaval-making traditions in the Balkans. Museum specimens, instruments documented during fieldwork, and relevant literature were evaluated together. The study focuses on the dimensions, bore diameters, fingerhole arrangements, construction techniques, and regional variations of chifte kavals. By comparing data obtained from different regions, similarities and differences among chifte kavals were identified, and the characteristics of this instrument tradition that may contribute to the fields of organology and ethnomusicology were highlighted.

Method

An initial search was made for Albanian, Bulgarian and Macedonian literature covering the subject ofchifte kavals. As a result it became clear that the crafting of these instruments in Bulgaria was centered around the Southwest Rhodope Mountains, home to Bulgarian Muslims, and that it would be more likely to find these instruments in Kosovo rather than Albania. A search was conducted of musical instrument museums in Europe and the United States. A searchwas also made of ethnologic museums in Bulgaria, Macedonia and Kosovo. Curators of those museums having examples of chifte kavals were contacted, asking for photographs of the instruments. All curators but one provided photographs. The curators were asked if they would measure the instruments, explaining what particular details were required. All

museums but one (not the same one) agreed to measure the kavals for the article. Measurements were made with metric tape measures. In no case were measurements obtained from photographs provided, due to the distortion inherent in photographing long, thin objects. All measurements were conducted by museum curators. Curators were asked for any additional information about how and when instruments wereprocured. In one case, the gentleman providing the instrument was available, and was contacted for further information.

Results

After receiving from Lyuben the family name (Terziev) of one these players and their whereabouts, I travelled in 2000 first to Skopje, Macedonia to pick up a friend; next to Sofia, the capital of Bulgaria, then by bus south to the city of Blagoevgrad, and finally by "expedition" of college students, another 147 kilometers due south to the village of Ablanitsa, in the Southwest Rhodope mountains, very close to the Greek border. We spent the late afternoon and evening listening to Ablanitsa residents Arben Terziev and friend play Rhodope melodies. Ablanitsa is one of fourteen villages in the Municipality of Hadjidimovo, all of which have predominantly if not exclusively Muslim populations, as do villages in neighboring municipalities. Below is Arben Terziev (in the jacket) and his longtime friend playing for us.

Photo 1. Chifte kaval players Arben Terziev and a fellow musician performing traditional Rhodope melodies in Ablanitsa, Bulgaria. (Source: Anthony Tammer Personal Archive)

While North Macedonian kavals will have a bore diameter of 15-17 mm, these kavals typically have a bore of around 13 mm. – 15 mm. The instruments were not in tune with themselves, going flat as the scale ascends. In part that can be from a rough bore and/or little recent use. A little vegetable oil poured into the bore to smooth it out would probably have helped.

The wood surface was scored ornamentally with marks that were now so faded as to be barely visible. The geometry of the blowing edge was a simple outside bevel to form a sharp blowing edge. The bottom end was flared out on the outside for strength. Finger-hole placement was similar to Macedonian instruments, but the spacing seemed small for kavals of that length.

I asked about the age of the instruments, and was told they were at least 40 years old. "Were they from Ablanitsa?" Definitely. "What was the name of the maker?" Terziev and his friend looked at each other in silence. It seemed not possible that the flutes would be from Ablanitsa, yet they would have no idea who made them, even if they were made a generation or two ago. Not to be intrusive, I changed the subject to general small talk. Arben picked up a modern 3-piece kaval and played Thracian melodies excellently on it. He had taken lessons, he said, but his real love was not the kaval at all, but the Turkish ney. He would give anything to see one. After some hours passed it was time to go back to Sofia, the first stop on my way back home to California. It would take several trips to find out more about the chifte kaval in Bulgaria. I knew from experience when searching for flutes and flute players in Greece and Macedonia one should not push things: There is much ethnic and national pride wrapped around the subject. At the time I had no knowledge of the publications of Bulgarian ethnomusicologists who had written about these instruments.

In 2005, I found another set of Bulgarian chifte kavals, on display in the Gotse Delchev Historical and Ethnologic Museum. The larger town of Gotse Delchev is a scant 22 kilometers northwest of the village of Ablanitsa.

Photo 2. Chifte kavals attributed to the village of Beslen, exhibited at the Gotse Delchev Historical and Ethnographic Museum, Bulgaria. (Source: Anthony Tammer Personal Archive).

On the third floor of a wonderful old mansion is a glass case holding a set of chifte kavals, and what I saw took my breath away: Chifte kavals whose fingerhole spacing, as you can see above, was not even, but rather had a larger space between the hands, that is, between the third and fourth fingerhole, similar to the Turkish ney (the ney has only three fingerholes for the bottom hand as opposed to the kaval's four). I had never seen kavals before with variable fingerhole spacings. The (then) curator of the museum Spaska Paskova explained that these kavals were made in the village of Beslen: She was quite sure of that. A glance at the map provided below (p. 19) shows Beslen to be close to Ablanitsa.

From Gotse Delchev I hired a taxi to first go back to Ablanitsa, to see Arben Terziev again, to find out if the ney I ordered for him had arrived. It had, his father told me, but Arben wasn't home. Then on to the nearby village of Teplen. There I asked about chifte kavals and was introduced to a middle-aged man, Ahmet Daud Navkof, who told me that there used to be a kaval maker in Teplen, Ali Ahmev, who had passed about 10 years ago. He showed me his pair of kavals, close in appearance to those I had seen a few years earlier in Ablanitsa. One instrument was cracked and unplayable, but the other was in good condition. The cracked instrument - beyond repair - was not discarded, but rather was kept together with its decades-long partner. I asked Ahmet if he would play for me, and he tried, but could not; His fingers were stiff and arthritic, and so I played it. The instrument seemed to jump to life, and was in tune with itself, in spite of not having been played or oiled for heaven knows how long. I asked Ahmet how old the instruments were. He said he didn't know, but thought they were made before he was born, over sixty years ago. I asked what wood they were made of, and was told "Muzhdraf." Years later I learned that in the Southwest Rhodopes European ash wood is referred to as "Muzhdrun" or "Muzhdruf" as opposed to the Bulgarian/Macedonian "Yasen."

So now we have three sets of Bulgarian chifte kavals, two of which seem to have equally-spaced fingerholes, one of which (the teplen kaval) was in tune with itself, while the other (Ablanitsa) was decidedly flat, and the third (Goce Delchev Museum specimen) having unequally-spaced fingerholes. I could not believe these variations would be produced by one kaval maker. Younger members of the kaval-making family are carefully trained, over years, to make them. Liman Ferati, kaval maker in Macedonia, had said his son would take eight years of training and practice to reliably make a chifte kaval set, as he, Liman, was trained by his father, Išlam.

My fascination with these one-piece flutes stems in part from the way they are made: out in an open yard, without the need of powered machines, rulers, or anything so heavy as to be an impediment to the migrations of a transhumant pastoral people. Made without regard to a musical key, the length of the instrument is traditionally requested by a customer in terms of fists placed one over the other on a stick; the spacing of the fingerholes being measured in finger-widths (a longer flute means the maker presses his finger harder on the wood, creating a wider space between fingerholes).

In 1960 the Bulgarian ethnomusicologist Ivan Kachulev, along with several other ethnomusicologists, made an excursion to the Southern Rhodopes. Kachulev's resulting article *Narodnite Instrumenti I Instrumentalna Musika Na Bulgarite Mohamedani V Rodopite* [Folk Instruments and Instrumental Music of the Bulgarian Muslims of the Rhodopes] (1962) includes several photographs of chifte kavals: kavals on display at the Institute for Music, in Sofia;

another set from the musical instrument museum in St. Petersberg, and chifte kavals played by musicians in the Rhodope villages of Sarnitsa and Nastan (the latter now incorporated into Devin). The Nastan kavals were made in three pieces. The Sofia and St. Petersburg instruments were thought by Kachulev to have been made in the village of Beslen, which he considered to be a center of chifte kaval-making.[1] Poor roads and bad weather prevented Kachulev from travelling to Beslen, and it is unclear whether he ever did visit the village.

Kachulev explains that to prevent these thin-walled kavals from cracking or leaking air, they are encased in the intestine of a young lamb. My woodworking friend and Bulgarian gaida (bagpipe) player Hector Bezanis noted that this was a popular procedure in the past, showing me a dramatic picture of a Serbian kaval covered with the skin of a snake. In the Instrument Museum of the Royal Conservatory of Music in Brussels are two sets of chifte kavals, with case, said to be made of "intestine and wood." The instruments were procured "before AD 1899."[2]

The first page of Kachulev's article extols the Bulgarian national purity of Muslims living in the Southwest Rhodopes: Their Bulgarian language usage for instance, is pure. The 1962 excursion of ethnomusicologists into this area of the country was taking place in the context of a climate of increasing persecution of Bulgaria's minority populations: In 1962 Bulgarian Muslims were forbidden to attend Turkish-language schools. It got horribly worse from there (Kamusella, 2019).

Eleven years after the publication of Kachulev's work, the ethnomusicologist Manol Todorov published his *Bulgarski Narodni Muzikalni Instrumenti* [Bulgarian Folk Musical Instruments] (1973) His dated list of informants indicates that he had been interviewing musicians throughout Bulgaria for at least ten years (1962-1972). In the book he cites 73 informants, two of which, a father and son, interviewed in 1972 in the town of Nastan, Smolyan Municipality (in the Southern Rhodope Mountains) played chifte kaval.

Todorov also had viewed the chifte kavals in the St. Petersberg State Institute of Theater, Music and Cinematography collection of musical instruments, as exhibit 1885-B, procured in 1872. He commented that the chifte kaval is thus "e mnogu stara narodna muzikalna traditsiya" [a very old folk music tradition.] (p.48) It is interesting to note that in 1872 the territory of the Southern Rhodopes, including the town of Serres, was considered a part of Macedonia (Kanchov, 1900) and would remain under Turkish rule until 1912. In the Saracatsan[3] Museum of Serres there is a single kaval with case that looks very similar to those residing in the Gotse Delchev museum.

Todorov describes in general how three-part kavals are made, using a "primitive" lathe. He does not describe how chifte kavals (a single-piece wooden kaval) are made. Chifte kavals are not turned in a lathe but are cut to cylindrical size, after hand boring, with a hand-held drawknife. Considering Kachulev's and Todorov's writing, and my own observations, chifte kavals were found in the villages of Ablanitsa, Teplen, Barutin, Beslen, Nastan, Sarnitza, and possibly Velingrad.

Photo 3. Kosovan chifte kaval players from Prizren, photographed by Peter Brömse in the 1930s. (Source: Brömse, 1937)

Across the northwestern border of North Macedonia lies what is now (since 2008) the Republic of Kosovo. Much of Peter Brömse's excursion as related in his 1937 book *Flöten, Schalmeiein, und Sackpfeifen Süd-Slawiens* [Flutes, Shawms, and Bagpipes of the South Slavs] takes place in Kosovo, which was then - along with Macedonia - a part of the

Kingdom of Yugoslavia. Brömse provides a picture of two Kosovans (Photo 3). I placed these folks in Skopje. In fact they might have been playing in their hometown of Prizren, the second most populous city in Kosovo. The two musicians are from Prizren but lived in Skopje.

Photo 4. Kosovo kaval attributed to Uke Maksute the Elder, Djakova (Gjakova), Kosovo, preserved in the Stearns Musical Instrument Collection, University of Michigan

Pictured to the above is a Kosovo kaval in the Stearns Musical Instrument Collection at the University of Michigan. Dimensions are below. This kaval was purchased in Djakova, Kosovo, in 1971 by Prof. William Lockwood, an anthropology professor at the university. The kaval was given by him to the university in 1999. Collection information informs us the kaval was made by Uke Maksute the Elder, an ethnic Albanian from Djakova, born in 1909. So Uke was 62 years old when Prof. Lockwood purchased the kaval. The collection description relates that Uke learned his craft from Djakova craftsman Praksi Deceli. It is hard to see, but the designs on the kaval depict two snakes, undulating on either side of the fingerholes. Doli ((2009) discusses the snake symbol as bringing good luck in his doctoral thesis. There is no information to suggest this instrument was one of a pair, but the known prevalence of paired kavals in Kosovo would make it likely. I could find no reference to Maksute or examples of his kavals in the ethnographic museum of Djakova.

The distal end of the Kosovo kaval in the Stearns collection has a restriction at 15 mm from the bottom end, down to a diameter of 11 mm and below this a bell shape carved out to the end of the instrument. The Greek musicologist Fivos Anoyanakis (1992, pg. 148) explains cryptically that the reduction "is required for the expulsion of air" from the instrument. Griffiths (1999) found this restriction in some Albanian kavals. Evidently Greek and Albanian kavals sometimes included this feature as well.

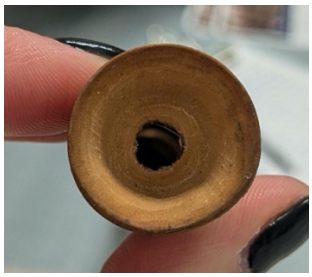


Photo 5. Internal bore restriction at the distal end of a Kosovo kaval, showing the reduced opening characteristic of some Balkan kavals. (Source: Anthony Tammer Personal Archive)

The life history of another Kosovo kaval maker and musician, Shaqir Hoti (1936-2021), has been recorded and transcribed by *Oral History Kosovo* (2015). Filled with the joy of music and the horrors of war, it is well worth reading the 24-page transcription. The URL is listed in the bibliography. A sample of his musicianship has been recorded and is listed in the small collection of YouTube videos here. One of his chifte kavals is measured here.

Ramadan Sokoli is a noted authority regarding Albanian folk music. In his book *Veglat Muzikore Te Popullit Shqiptar* [Musical Instruments of the Albanian People] Sokoli has little to say about chifte kavals, but when he does mention them, he refers to Kosovo:

> *It goes without saying that in order to play well, both instruments must be identical, which is why in some areas of northeastern Albania, and especially in Kosovo, long chift kavalli (two flutes) of identical dimensions and holes, placed on a forked rod, are used. (Sokoli, 1991, p.99)*

Photo 6. Decorated handle of a wooden sipki used for storing paired chifte kavals, Kosovo. (Source: Horniman Museum, London, Item M30.6.53/1).

"Placed on a forked rod" refers to the unique feature of storing Kosovan and North Macedonian chifte kavals: A single slab of hardwood (usually beech) is cut and shaped to provide two sticks - "sipki" - of about ½" inch diameter, joined at one end, and slightly longer than the length of the kavals it would hold. Thus the matching kavals are held as one entity. The joining end, a kind of handle, is carved to various shapes by different makers. Holes are drilled in the ends of the sticks, and bits of rags of stuck through the holes. These are soaked in an oily substance, to coat the inside of the kaval. Here is an example of a carved handle of the sipki, from a specimen in the Horniman Museum of Musical Instruments, London (Item M30.6.53/1). This instrument pair was acquired in 1953, coming from the area of Peja, Kosovo, and was originally covered with sheep intestines. The fingerholes appear to be equally-spaced, and the distal end is carved into an octagonal shape. The bottom picture bellow shows the distal end of a Ferati family kavals made in Arachinovo, near Skopje, North Macedonia. Unfortunately, the Kosovo instrument could not be measured for this article

Photo 7. Comparative details of Kosovo and North Macedonian chifte kavals. Upper left: distal end of a Kosovo chifte kaval from the Horniman Museum, London. Upper right: distal end of a Ferati family chifte kaval from Arachinovo, North Macedonia. Lower left: carved terminal ornament of the Kosovo specimen. Lower right: carved terminal ornament of the Ferati family specimen. (Sources: Horniman Museum, London; Anthony Tammer Personal Archive).

I do not dwell upon the Ferati family of kaval makers here since they are the subject of my previously published article Kavals and Dzamares: End-blown Flutes of Greece and Macedonia (1998).

Perhaps this octagonal carving above is vestigial ornamentation reminiscent of black-powder smooth-bored musket barrels of past centuries, many of which were forged octagonal at the breech end.[4] Note the rhombus relief carving at the head of the Horniman Kosovo and Ferati kavals. The similarity may be the result of the Ferati family having originally

come from Tetovo, very close to Kosovo, at a time when there were no borders. Of course, these similarities are "merely" ornamental or symbolic (rhomboids are associated with fertility), having nothing to do with the acoustic design of the instrument. This is not, however, the view of the kaval maker. We are used to separating ornamental from functional design features, but the kaval maker considers all features of the instrument to be an essential part of the definition of the kaval. Any discussion with the kaval maker Işlam, I found, about the purely "ornamental" led to instant confusion.

As an exchange student to Skopje, Macedonia in the mid 1970's, I studied Macedonian kaval with two elderly men and played with the Skopje group "Vlado Tasevski". During this academic year the only kavals I saw in Macedonia were chifte kavals made by Islam Ferati, residing in the nearby village of Arachinovo. I had no idea of the existence of another ethnic Albanian kaval maker, Salla Shabani, who was making kavals (among other instruments) in his Gostivar workshop. Bekim Ramadani's recent article (Ramadani, 2025) is about this skilled instrument maker. Shabani was not only an instrument maker; He was a teacher of kaval, and his teaching activities have helped lead to a revival of kaval playing today among adult ethnic Albanians in North Macedonia. Shabani and his students - named in Ramadani's article - may be heard on a plethora of YouTube videos. At this date (January 2026) The name Salla Shabani itself calls up more than 20 YouTube videos.

The Musical Instrument Museum of the New York Metropolitan Museum of Art holds a collection of Macedonian folk instruments, acquired in 1946: a chifte kaval set (object 1976.8.6a-c); gaida (bagpipe); shupelka; (short diatonic end-blown flute); dvoinika (double whistle), and zurla (shawm) all made by instrument maker Velko Janjevich, of Skopje, Macedonia. The kavals are said to have been made in 1937. Measurements are given on Pg 17.

What kinds of variation do we find in the various chifte kavals in Bulgaria, North Macedonia and Kosovo? These instruments are all made from the same wood. They are all thin-walled, with the same pattern of fingerholes and "resonator holes" below the bottom finger hole, except for the Shakir Hoti instruemts, which have two rather than three resonator holes. Also, the chifte kavals made by the Ferati family have tapered inside diameters at blowing edge. A bore of 15, 16 or 17 mm is tapered down to 14.75 mm in the top 17mm of the instrument. This taper creates a breathy, intense tone. The diameter of the blowing edge for Ferati kavals is determined by using the shell casing of a "Tursk Martini" rifle, whose head diameter is 14.75 mm. The casing head should just fit inside the blowing diameter. No other chifte kaval set in this article has this taper. We have also seen that at least one set of Kosovo chifte kavals was restricted at the distal end. The fingerholes size is always small, and does not vary within a particular kaval set. There is a great difference in overall length: from 515 mm to 812 mm.

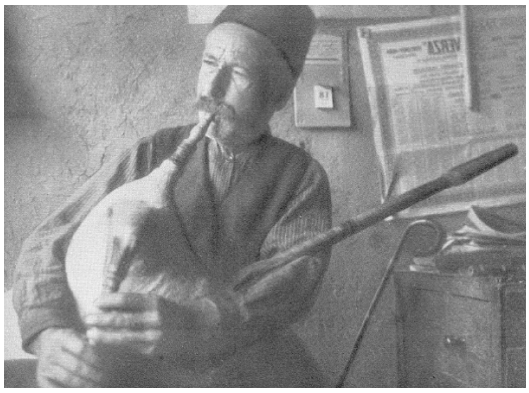


Photo 8. Velko Janjevich playing the gaida (bagpipe) in Skopje, Macedonia, photographed by Peter Brömse in the mid-1930s. (Source: Brömse, 1937).

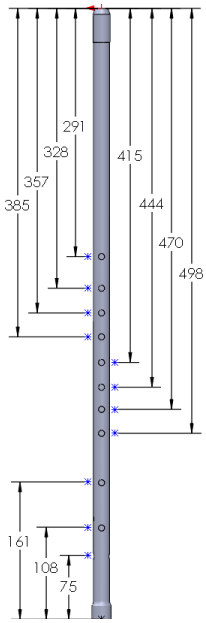
A feature I thought would remain the same was equally-spaced fingerholes. Bromse noted that all of the musicians he interviewed were adamant that the fingerholes must be evenly spaced, though no one knew why. However, the Beslen kavals in the Gotse Delchev museum are shown not to have equally-spaced fingerholes. An inspection reveals that the Stearns Kosovo kaval also has a larger spacing between 3rd and 4th fingerholes, though not as pronounced as the Gotse Delchev example. The Bulgarian chifte kavals held in the National Ethnographic Museum in Sofia have fingerhole spacings that increase incrementaly as the holes depart from the blowing edge. There is great variation in the bore diameter. We see a range in bore size of from 11.5 mm to 17 mm. In some of the kavals shown here the distance from

the thumbhole to the first fingerhole is quite large. The same is true of the distance from the last fingerhole to the back hole signifying the lowest note of the instrument. Though the kaval is mainly a chromatic instrument, the first (lowest) interval is closer to a whole tone. In general appearance the Kosovo kavals and North Macedonian kavals made by ethnic Albanians appear to be one branch, while the Bulgarian chifte kavals seem to be another. Closer to the Kosovo branch are specimens of Greek chifte kavals from the area of Epirus, an area once associated with kaval-making.

In the following pages I provide schema for the variety of chifte kavals presented above. The intent is to provide a starting point for anyone wishing to bring to life one or a pair of chifte kavals from as far back as "before 1899". A good material to start the process would be hard maple. A 30" length of maple, 1" in diameter (pool cue material) may be purchased for about $15.00. The first step, after cutting to length plus perhaps ½ inch, is to drill through the length of wood. I use Eldorado brand gun drills for this, but these drills do require a steadying drill guide in front of the wood. Once the drill is inside the wood it runs true. These gun drills are hollow, and compressed air can be used to blow out chips.

It is impossible to predict the intonation of kavals simply by looking at the schema. The reason is that the instrument must be held with at least two fingers minimum to prevent it from falling. These fingers cover holes, which change the intonation. The finger positions will change according to what notes are sounded, all leading to an overwhelmingly complex system. Only by playing an instrument over time can the player learn its characteristics and make adjustments with the next instrument.

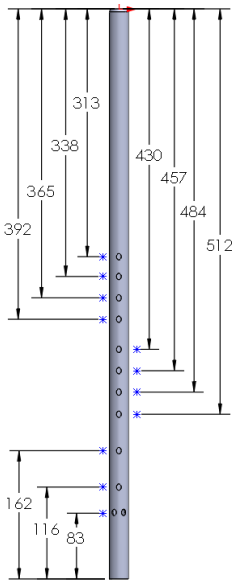
Chifte kavals made by Išlam Ferati, Arachinovo, Macedonia, mid 1970's.



Length of the instrument = 717 mm
Bore diameter = 17 mm
Blowing edge diameter = 14.75 mm
Body diameter = 20.5 mm
Fingerhole diameter = 7.5 mm slightly oblong
Thumb hole is at 291 mm bored through the back.
Holes at 75 mm from bottom are bored thru both sides
Hole at 161 mm from the bottom is bored through the back.
Ferati kavals are carved octagonally at the distal end, not shown here.

Figure 1. Technical drawing showing the dimensions, bore diameter, and fingerhole placement of a chifte kaval made by İslam Ferati, Arachinovo, North Macedonia (mid-1970s)

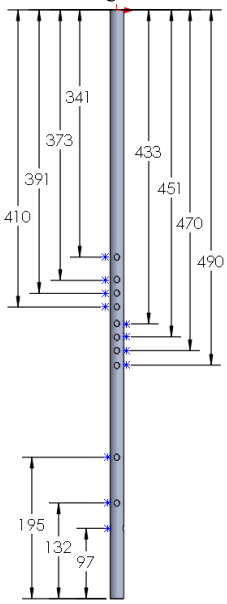
Chifte kavals on display at the Gotse Delchev, Bulgaria Historical Museum. Maker unknown, said to be made in the village of Beslen.



The length of the kaval is 720 mm.
Internal diameter at the distal end was measured at 12 mm.
The thumb hole at 313 mm is bored through the back of the instrument.
The hole at 162 mm is bored through the back of the instrument.
All holes are elliptical, 6 mm wide by 8 mm long.
The two resonance holes at 83 mm are 17 mm apart from center to center.

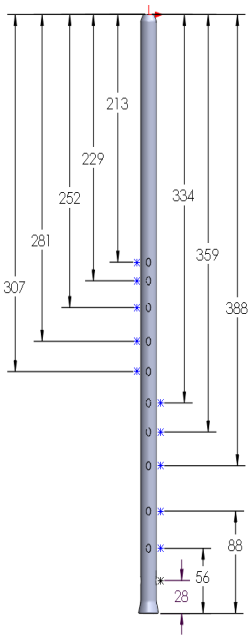
Figure 2. Technical drawing showing the dimensions, bore diameter, and fingerhole arrangement of a chifte kaval attributed to Beslen village and preserved at the Gotse Delchev Historical Museum, Bulgaria

Stearns Collection University of Michigan Kosovo Kaval. Maker: Uke Maksute the Elder



Length is 812 mm
Bore diameter is 17 mm
Body diameter is 20 mm
Hole diameter of plug at distal end is 11.5 mm
Resonance holes are bored through both sides at 97 mm.
The distance from the distal end to the face of the obstruction is 15 mm
The thumb hole at 341 mm is bored from the back
The hole at 195 mm is bored from the back

Figure 3. Technical drawing showing the dimensions, bore diameter, fingerhole arrangement, and distal-end restriction of a Kosovo kaval made by Uke Maksute the Elder (Stearns Musical Instrument Collection, University of Michigan)



The length of the instrument is 515 mm
The thumbhole at 213 mm is bored from the back.
The hole at 88mm is bored from the back
Bore Diameter is 11.3 mm
(There might be contraction due to age.)
Body diameter = 17 mm.
Resonance holes are bored through both sides at 28 mm
The fingerhole size is 7 mm long by 5mm wide

Figure 4. Technical drawing of Bulgarian chifte kaval item 2400, Royal Museum of Arts and History, Brussels (before 1899)

Bulgarian Chifte kavals item 2400 in the collection of the Royal Museum of Arts and History (Brussels), Musical Instrument Museum. The acquisition date is listed as "before 1899". Maker unknown.

Of interest to note is that the thumbhole is (within .5 mm) one-half the length of the distance between the blowing edge and the back hole at 88 mm. Were these three elements carved first, then used to lay out the remaining fingerholes of the instrument?

More Photos of the Brussels Chifte Kavals, possibly made in Beslen.

Photo 9. Bulgarian chifte kavals from the Royal Museum of Arts and History, Brussels, possibly made in the village of Beslen. (Source: Royal Museum of Arts and History, Brussels)

Many decades of storage have taken their toll on these instruments. The upper two kavals are partially covered in remaining sheep intestine.

Photo 10. Flared distal end of a Bulgarian chifte kaval, Brussels collection. (Source: Royal Museum of Arts and History, Brussels).

The flair at the distal end provides protection from cracking. The bore is narrow on these instruments (roughly 13 mm here) compared with the 15-17 mm bore of the Kosovo and North Macedonian kavals.

The blowing edge is a bit battered in this example. In general, the blowing edge is not required. To be very sharp. An example is the small, Greek end-blown flute, the floghera designed by the musician Aristides Vasilaris. Vasilaris incorporated every possible design feature to make the instrument sound less strident. The blowing edge of this instrument is created by simply rounding off the outside diameter, thus creating an edge of 90 degrees.

Photo 11. Detail of the blowing edge of a Bulgarian chifte kaval from the Royal Museum of Arts and History, Brussels.

Bulgarian kavals held in the National Ethnographic Museum, Sofia. National Ethnographic Museum, Item IM-5 Institute of Ethnology and Folklore Studies, Bulgarian Academy of Sciences. The case holds two matching kavals. Information concerning makers and dates when instruments were transferred from the Institute for Music Studies.

Length = 75.7 cm
Fingerhole size:
8 mm long by 7 mm wide.
O.D. 20 mm
I.D. 14 mm
Holes at 85 mm are bored thru both sides
Thumb hole at 323 mm is bored from the rear
Hole at 159 mm is bored from the rear.

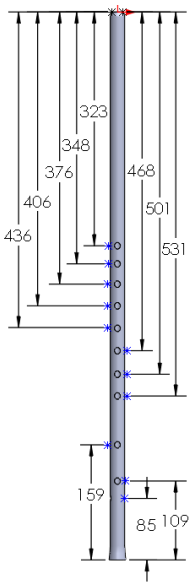


Figure 5. Photograph and organological schema of Bulgarian chifte kavals (Item IM-5), National Ethnographic Museum, Sofia

North Macedonian Kaval by Trajko Korunosky, residing in the Phoenix Musical Instrument Museum. Presented to the museum in 2009 by musician Stefche Stojkovski. Mr. Korunoski was from the city of Prilep. Stefche purchased these and other kavals from Trajko in 2005 during a gaida (bagpipe) festival in the village of Dolneni (16 kilometers northwest of Prilep). The Phoenix MIM could not provide a picture of the korunosky kaval. Mr. Stojkovski graciously provided me with his own. Measurements provided by Phoenix Musical Instrument Museum Personnel.

Length:751.5 mm
Bore:15.7 mm
Body diameter is 20 mm.
Thumb hole at 317 mm
is bored from the back.
Hole at 169 mm
is bored from the
back.
Two holes at
79 mm are bored
Through from the sides
Finger hole size is
7.7 mm wide by
8.8 mm long

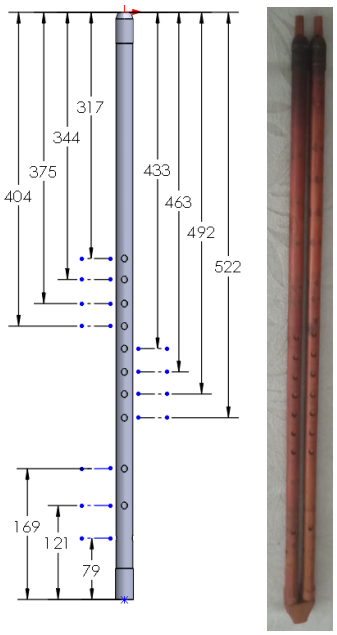
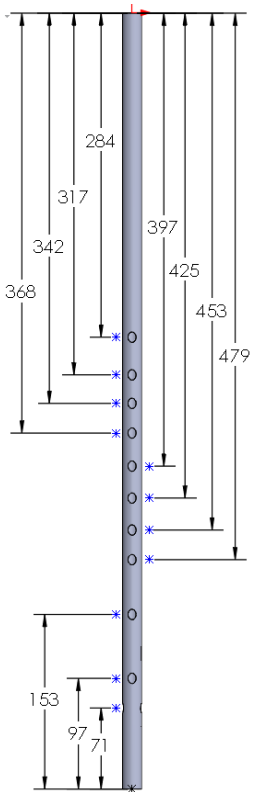


Figure 6. Photograph and organological schema of a kaval made by Trajko Korunosky, preserved in the Musical Instrument Museum, Phoenix, Arizona.

Maker: Velko Janjevic, 1937 Skopje, Macedonia (Kingdom of Yugoslavia).
In the Metropolitan Museum, New York. Item 1976.8.6a-c, procured in 1976 from the Crosby Brown Collection of Musical Instruments.



Length = 680 mm
Outside diameter = 20 mm
Bore diameter = 15 mm
Thumbhole at 284 mm is bored from the back
The hole at 153 mm is bored from the back
Resonance holes at 71 mm are bored through both sides.

Figure 7. Organological schema and measurements of a chifte kaval made by Velko Janjevic, Skopje, Macedonia, 1937, preserved in the Metropolitan Museum of Art, New York.

Kosovo Kavals by Shakir Hoti

Owned by Visar Munishi, Institute of Albanology in Prishtina. Department of Ethnomusicology

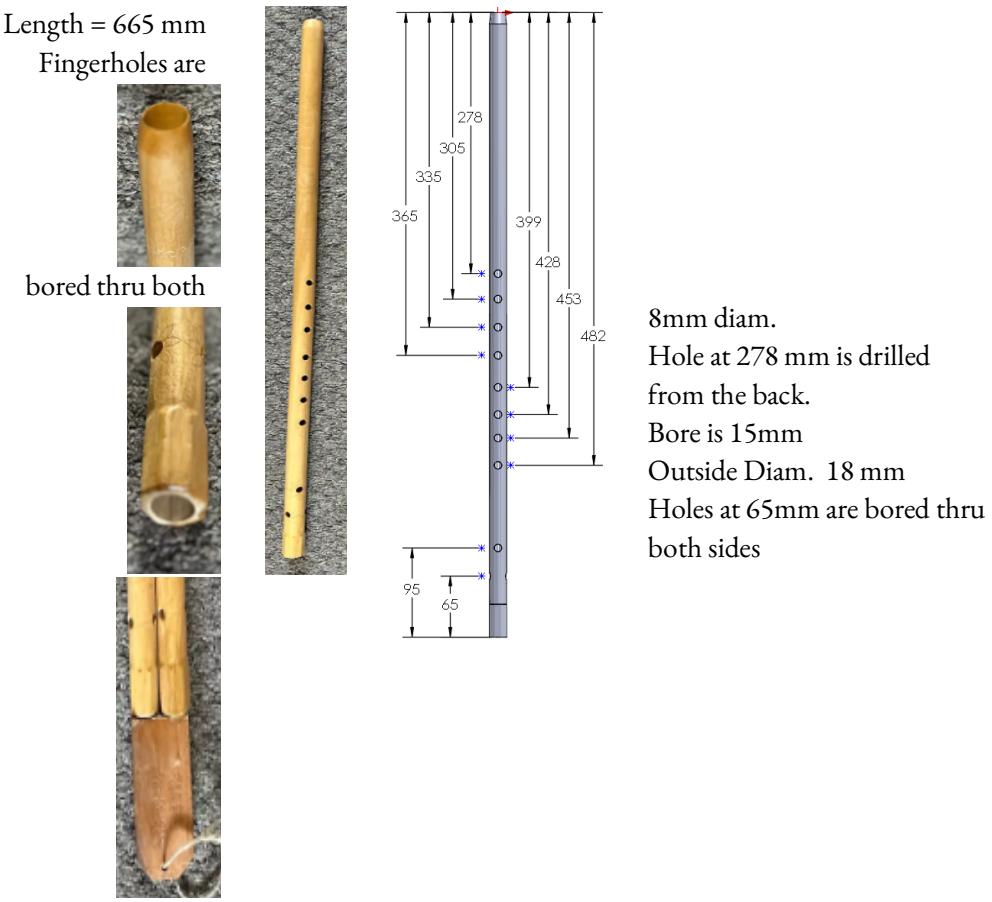


Figure 8. Organological characteristics of a Kosovo kaval made by Shakir Hoti, including overall view, construction details, dimensions, bore diameter, and fingerhole arrangement.

Figure 9 is a map showing the towns of Gotse Delchev, Ablanitsa, Teplen and Beslen.

Figure 9. Geographic distribution of selected chifte kaval localities in the Gotse Delchev region of southwestern Bulgaria

Conclusion

Peter Brömse (1937:7) wrote "When I asked about the criteria used to determine the dimensions of the instruments, I received no explanation other than that the proportions are simply the way they have to be. The traditional dimensions are passed down from generation to generation without questioning." Bromse wrote that no serious discussion of

intonation was possible given the method of spacing, which is determined simply by finger thickness (For a longer flute, the finger is pressed harder on the wood, creating a wider space between holes):

The finger holes are placed on the instrument tube at points where the fingers naturally fall during normal playing. This arrangement is based on the primal desire to make every tool—and a musical instrument is indeed a tool—as handy as possible in the truest sense of the word, i.e., to adapt it to the most comfortable grip of the hand. The pitches corresponding to such an arrangement are, in their relationship to one another, naturally completely irrational and different for each individual instrument. The structure of the scale is not in any way deliberate or intentional, since the instrument maker places the finger holes not according to specific intervals, but rather depending on the length and thickness of the fingers of the player for whom the instrument was built, i.e., on entirely "extramusical" factors. This resulting tonal order can be called the finger-hole tonal system "Griffonsystem". (Bromse 1937:97)[5]

It is not the case that all kavals selected here follow Bromse's description. Regarding one kaval set noted here, found in the Ethnographic Museum in Sofia, the distance between fingerholes from the thumb hole progressively down are: 25 mm, 28 mm, 30 mm, 30 mm, 32 mm, 33 mm, 30 mm. The general trend in this instrument is to space the holes progressively further apart. The Gotse Delchev kavals, as shown above, have a large gap between the hands. The finger spacing is quite precise: 25 mm, 27 mm, 27 mm, 38 mm, 27 mm, 27 mm, 28 mm.

Given the fingerspacing found in some instruments, I thought "What could be the reason for this, other than intonation?" but this I now believe, is a mistaken approach. Instead of the relationship of a kaval maker to the desired intonation, we see, for example in North Macedonia, rather a kinship intergenerational transmission of tacit knowledge in the traditional craft production of kavals which leads to a very conservative aproach to change.

The Instrument labels in the Brussels Museum of Musical Instruments list their chifte kavals as "a type of (Turkish) ney". In various articles ethnomusicologists have thought of the kaval as having originated from the ney. The ney and the kaval differ greatly: differing fingerhole size, number and placement; different materials, the ney being made of cane (Arundo donax); differing bore geometry, the ney having a conical bore and a profound restriction at the node closest to the blowing edge. Unlike kavals, neys are sized according to key: various sizes are all built according to a schema of ratios that keep each instrument in tune with itself regardless of key. Besides this, the ney is used for playing Turkish classical music, while the kaval is a folk instrument. One would not expect to find the kaval in a Turkish classical music orchestra. Or so I thought. On my first visit to Istanbul (1986) to study ney, I was invited to sit in on a rehearsal of the Istanbul Radio Orchestra. Aside from a ney player, two kaval players were part of the orchestra! The kavals were playing extremely legato, with sweeping glissandos, with their notes floating above the orchestra. It was a sound I had always attributed to the ney. I learned it is best not to make generalizations from afar about the relationship of these end-blown flutes to one another other.

The ney is constructed such that, regardless of key, the thumbhole is always situated half the length of the instrument. The acoustical length of the kaval is far shorter than the length of the tube, since there are "resonator holes" below the bottom open hole (bored at the back) that determines the lowest note of the kaval. When taking note of the Brussels kaval we find exactly the same ratio as the ney: the distance from the blowing edge to the thumbhole is exactly one half the length of the blowing edge to the last unfingered open hole, bored at the back. But this is not true of other kavals measured for this article.

If Balkan kavals must have their origin in Turkey, it seems far more likely that they would have originated from Turkish kavals (perhaps played by Yürök shepherds imported into the Balkans) than from the Turkish ney, given the rigid social stratification of Ottoman society. Despina Mazaraki (p. 283) notes that the Dzamara (long end-blown kaval) found on the Island of Lesbos was introduced from Smyrna. She continues "One might suppose that those in Thrace were also introduced from Turkey."

At the time of writing, sadly, I have found only one name to associate with Bulgarian chifte kaval making. This is in contrast to makers in Kosovo and North Macedonia. Eliot Bates (2012) writes of "a seemingly outdated class on measuring and documenting physical objects" in describing dead organology classes. So why am I intent on this seemingly outdated activity? First, the kaval is not a violin: it can be reconstructed by any wood craftsman or machinist.

The wood - European ash - is not valuable, and can be substituted for nicely by American hard maple, with its tight grain. If this article can be a source of information to folks wishing to reconstruct these instruments, perhaps years from now, it will have served its purpose. But there is another reason, having to do with paying tribute to these Balkan craftsmen. This can best be described by an email I sent (in English and Bulgarian) to the mayor of Beslen, Bulgaria, a village seemingly noted for its chifte kaval making:

> *Dear Mayor Chapkanov,*
> *I am writing from California to ask a favor: I am an independent researcher writing an article about chifte kavals from Bulgaria, Kosovo and North Macedonia.*
> *Beslen kavals are found in museums in Brussels, St. Petersburg, Gotse Delchev, Serres, and Sofia. So the village of Beslen is famous for kaval making. But no one knows the family names of makers of these instruments. These craftsmen are lost to history. No one knows if there are people alive who have made these chifte kavals, or if people are still making them. Makers of chifte kavals in Kosovo and North Macedonia are known, and are written about in journals. I am trying to put the names of Beslen makers, living or not into a journal article about chifte kavals that will be published and available for years to come. I am asking for your help in this matter.*

Mayor Chapkanov emailed me back 2/3/26 to say he will work on this for me as soon as possible.

Notes

1. There are two very fine concert flute makers in The U.S.: Haynes and Powell. Both are situated in Cambridge, Mass. Why is this? Because there exists a "society of expertise" in Cambridge, as in Silicon Valley. This kind of society of sorts may have existed in Beslen and sourrounding villages.

2. Information Concerning the chifte kavals in the Brussels Museum of Musical Instruments was published by Victor-Charles Mahillion in 1893:1922 Catalogue descriptive et analytique du Musee instrumental (historical et technique du Conservatoire royal de musique de Bruxelles:

3. Item 2400 Double Kaval:

> Both flutes belong to the ney type and are used among the nomadic Koudso-Vlach Population. They are simple cylindrical wooden pipes, pierced with nine lateral holes, the first of which is not covered by the fingers, and below these, three other holes whose opening serves only to adjust the intonation produced by the first lateral hole. The intonations obtained by the lateral holes in use are as follows: F, G, A, B flat, B, C, D, E, F

4.The Saracatsani are a semi-nomadic Greek-speaking shepherding people. Before borders were established they were transhumant, travelling throughout the southern Balkans with their flocks. Patric Leigh Fermor, in his book Roumeli (p.55) mentions that the Saracatsani had two kinds of flutes. "One is a sawed-off gun barrel into which holes have been bored at appropriate intervals...."

5. Regardless of Brömse's consideration of an irrational fingering system, there is a way of checking whether the kaval is in tune with itself. The kaval is usually played at the first overtone, the fundamental sounding very soft. The second overtone raises the notes another 5th. The kaval has two "enharmonic equivalents": different fingerings playing the same note. (The pitch is the same but the timbre is very different). The note played with all fingers down except the bottom finger, and overblown (2nd overtone) to raise it a fifth, should sound the same note as that played with the thumb raised. If this is not the same, the scaling of the instrument is incorrect, or at least, the thumb hole location is not correct. Similarly, if the kaval is played with all fingers down, and overblown a fifth, it should sound the same note as that sounded with only the thumb and 1st fingerhole covered. Enharmonic fingerings play an especially important role in playing both kaval and Turkish ney. Semsettin Alanc and Sinan Duru (p.133) demonstrate that ney player/composer, Neyzen Emin Dede (1883-1945) has written ney exercises with marks showing which position ("closed" or "open") of enharmonic fingering should be used when playing a particular melody.

Acknowledgements

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Bulgaria; Visar Munishi at the Institute for Albanology, Prishtina, Kosovo. Thank you to Stefche Stojkoski for providing information and photos re. Korunosky kavals. I am indebted to Professor Peter Brömse for giving me verbal permission to use his materials for further research and display.

Biodata of Author

Dr. **Anthony Tammer** is a retired educator, researcher, craftsman, and ethnomusicologist whose professional and scholarly work spans industrial education, occupational safety, precision metalworking, and the traditional musical cultures of the Balkans and Türkiye. His interest in Balkan folk music and Turkish classical music began during an academic exchange year in Yugoslav Macedonia in 1976, where he learned to play the Macedonian kaval. Upon returning to the United States, he performed Macedonian folk music with a Bay Area ensemble and was subsequently introduced to the Turkish ney by a student of the renowned ney master Aka Gündüz Kutbay. Dr. Tammer pursued ney studies for seven years before traveling to Istanbul to continue his training under Fuat Türkelman. This experience led to the publication of his article, *Constructing the Turkish Ney* (1992), published in *Turkish Music Quarterly*. In 1996, twenty years after his initial stay in Macedonia, Dr. Tammer returned to revisit the family of a respected kaval maker. Spending a day documenting the instrument-making process through photographs and observation, he gathered material that formed the basis of his publication *Kavals and Zamares: End-blown Flutes of Greece and Macedonia* (1998), published through the University of Maryland's *Ethnomusicology Online*. His fieldwork also included research in Greece, where he studied the floghera (short end-blown flute) with musician Aristides Vasillaris. In addition to documenting traditional instruments, he has spent many years constructing kavals and flogheras and continues to pursue research on Balkan wind instruments, including his current work on çift kavals. In 1994, Dr. Tammer spent seven months in Ankara working with the Turkish Ministry of Vocational Education (Mesleki Eğitim Bakanlığı). During this appointment, he conducted research on Turkish vocational education practices, resulting in the conference paper *Evaluation of Curriculum Development Research* (1994), presented at a conference organized by the Center for Occupational Research and Development. While in Ankara, he also studied Turkish Classical Music with the ensemble led by Polat Kale, son of Emin Kılıç Kale. Through this experience, he became acquainted with the musical philosophy of Emin Kılıç Kale and developed a lasting appreciation for the traditions of Turkish classical music and the hospitality of the Kale family and their associates. Professionally, Dr. Tammer's career has focused on precision metalworking, industrial education, and occupational safety. He was awarded a Regents Fellowship to pursue doctoral studies in Industrial Education at Texas A&M University, where he completed his PhD in 1994. His research contributed to the publication of *Teaching Welding Safety in Texas Community Colleges* (1997) in *New Solutions: A Journal of Environmental and Occupational Health Policy*, published by the Oil, Chemical and Atomic Workers Industrial Union. For more than twenty-five years, Dr. Tammer taught precision metalworking at several California Community Colleges and at a four-year high school. In recognition of his excellence in teaching and grant-writing activities, he received a $10,000 Eukel Trust Award. Now retired, Dr. Tammer continues his scholarly and practical engagement with traditional musical instruments and instrument-making, dedicating his time to completing his research and writing on çift kavals. At the age of eighty-one, he remains active in the preservation, study, and documentation of traditional musical craftsmanship and performance practices in the Balkans and Türkiye.

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A few YouTube performances with chifte kaval

Makedonier: (11/11/2008) Stefche Stojkovski on Gaida, kavals made by Trajko Korunoski https://www.youtube.com/watch?v=qrDquNa3ki8&list=RDqrDquNa3ki8&start_radio=1

Salla Shabani1545: (10/13/2020Salla Shabani and friend performing an ezgia (improvisation) https://www.youtube.com/watch?v=B_cAqhnjYpE&list=RDB_cAqhnjYpE&start_radio=1

Instrumenti 1 Shaqir Hoti (approx.. 2011) Kosovo kaval maker. Listen to the tone! https://www.youtube.com/watch?v=Lbmt6hhpq3s&list=RDLbmt6hhpq3s&index=1&pp=8AUB

Two ethnic Albanian kaval players from North Macedonia

TV Topestrada Tetove (2017) Tetova, North Macedonia Shevket Ismani, Shevket Latifi; https://www.youtube.com/watch?v=9Vra89GsYhE&list=RD9Vra89GsYhE&start_radio=1