



Yuping Xiaodi (Bamboo Flute) Musical Instrument in Yuping County, Guizhou Province, China

Li Xingchen

A Thesis Submitted in Partial Fulfillment of Requirements for

degree of Doctor of Philosophy in Music

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DEGREE	Doctor of Philosophy	MAJOR	Music
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ABSTRACT

The study employed the qualitative research methodology of ethnomusicology. The objectives are 1) To study the process of making a musical instrument of Yuping Xiaodi 2) To analyze the playing techniques of Yuping Xiaodi 3) To study the music cultural change of Yuping Xiaodi in Yuping county, Guizhou province, China. The data were mainly collected from fieldwork with the key informants and presented in the descriptive analysis format.

The results are as follows: 1) The making craftsmanship of Yuping Xiaodi is divided into four processes, including material selection, model making, carving, and finished product. There are many detailed steps in each process. It takes about 26 steps to make. Of all the steps, material selection and tuning are the most important. Carving is the most difficult. 2) There are more than 20 commonly used playing techniques for Di and 15 commonly used playing techniques for Xiao. They all need to use four techniques: Breath, fingering, lips, tongue. the playing techniques are classified into three levels: basic techniques, intermediate techniques, advanced techniques. 3) There are 6 main reasons for the change in Yuping Xiaodi instrument: Positioning and development, Policy and strategy, Business and marketing, Craftsmanship and technique, Transmission and protection, Performances and creations.

Keyword : Yuping xiaodi instrument, making process, playing techniques, music cultural change



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Chapter I

Introduction

1. Statement of the Problem

"*Yuping Xiaodi*" is a proper noun, which belongs to the first batch of national intangible cultural heritage. Yuping is a place name in Yuping county, Guizhou province, China. "Xiaodi" refers to two Instruments (Xiao and Di) made of bamboo. Xiao and Di, according to modern acoustics, are the concept of two in one. In traditional Chinese culture, Di is often symbolized as the dragon and Xiao as the phoenix. Xiao and Di are like dragon and phoenix, they are inseparable pair. Xiao and Di are two kinds of Musical Instruments, but we usually call them "Xiaodi". Yuping County is rich in Xiaodi musical instrument, so it has the reputation of "the hometown of Xiaodi" in China. The term "*Yuping Xiaodi*" comes from this. (Lin & K. R, 2009)

Xiao and Di are similar, but different. They are basically the same in basic structure, pronunciation principle and tone-setting method. However, there are great differences between them in timbre characteristics, volume size and range width. Besides the mellow and soft tone characteristics of Xiao, Di also has the personality characteristics of clear and bright tone, wide vocal range and high volume. The biggest difference between them is that Xiao is played vertically, with holes without membrane, while Di is played, with holes with membrane. In both vertically and transversely blowing, bundles of air flow are used to shoot into the blowing end of the pipe at an angle of an inclined plane, so as to produce edge vibration and form sound waves in the pipe. The length of the pipe is shortened by a transverse sound hole, and the frequency corresponding to the length of the pipe is emitted. (Zhou & S. B, 2002)

In China, the history of Xiaodi culture is longer than the history of human civilization of eight thousand years. So, why *Yuping Xiaodi* will stand out from the Chinese Xiaodi culture, become the unique one? If the complicated reasons are simplified, they will be condensed into the following reasons: 1) *Yuping Xiaodi* has a clear and beautiful timbre. Yuping-Xiao is deep and elegant while Yuping-Di is clear and melodious, carrying a pair of *Yuping Xiaodi*, you can express your feelings at any time. 2) As a handicraft, *Yuping Xiaodi* is delicate. Its production requires more than 70 processes, the carving art is breathtaking. Therefore, it is a treasure of

national Musical Instruments, and many Chinese and foreign collectors compete to collect it. 3) *Yuping Xiaodi* is made from the local water bamboo (a kind of bamboo in China). This kind of bamboo is hard and easy to preserve. No matter how long it is left, it will not be deformed, moldy or insect-grown. (Wang& X, 2012b)

As a traditional Chinese musical bamboo instrument, *Yuping Xiaodi* is famous for its beautiful sound and delicate carving. Made from local bamboo, there are dozens of procedures in the making of this instrument. According to historical records, *Yuping Xiaodi* were first made during the Yongle Period of the Ming Dynasty (1403-1424). It is the crystallization of the development of multi-ethnic cultures such as Dong, Han, Miao and Tujia in Yuping, and has high historical, cultural and technological value. In 1913, *Yuping Xiaodi* won the silver medal in the international handicraft Exhibition held in London, England, and the gold medal in the Panamanian International Exposition held in San Francisco, USA in 1915, making it the earliest Chinese national musical instrument to win the international prize. *Yuping Xiaodi* has won more than 20 national and provincial awards, the products are exported to South Korea, Japan and Southeast Asian countries, with Moutai wine, generous lacquer known as "Three treasures of Guizhou". In 2006, it was listed as a national intangible cultural heritage. In 2018, the trademark of *Yuping Xiaodi* was approved as "Chinese Well-known Trademark". (Wang& Z. C, 2017)

Yuping Xiaodi is not only an excellent national musical instrument, but also an elegant handicraft. It has a long history and is well-known at home and abroad. The raw material of *Yuping Xiaodi* is taken from local water bamboo (name of the bamboo in Chinese), the bamboo node is long and even, the wall thickness is appropriate, the quality of a material is solid, its material selection is very strict, the production process is tedious and delicate. The traditional carving of *Yuping Xiaodi* is quite characteristic. Its production, to go through the four processes: materials, blank, sculpture, finished more than seventy working procedure. Varieties from one Xiao and Di, has developed into seven Xiao and twelve Di more than 100 varieties of color designs. *Yuping Xiaodi* factory is one of the four national musical instrument manufacturers in China. (Zhang& J. X, 2018)

After 1949, the making technique was protected. 1980s to the early 1990s is the peak of the development of *Yuping Xiaodi*, products have been awarded the international excellent title, the highest annual output of more than 500,000, output value of more than 800,000 RMB. With

the acceleration of modernization, the traditional musical Instruments have received a great impact, and the protection and development of making techniques is grim. At present, with the acceleration of the modernization process, the national Musical Instruments have been greatly impacted, and the protection and development of the production techniques of the *Yuping Xiaodi* are grim. We should save and protect the skill of making technique, otherwise this special handicraft skill will be extinct in the world. (Zhang& W, 2012)

From the above information, in addition, for the long history with the production process has evolved and received awards and is famous and well known by people both at country and abroad. From a beautiful voice, the researcher is therefore interested in studying the making process of musical instrument, analyzing playing techniques and studying music cultural diffusion of *Yuping Xiaodi*. In order to conserve musical instruments and provides insights for those interested in furthering their studies in this musical instruments.

2. Research Objectives

2.1 To study the process of making musical instrument of *Yuping Xiaodi* in Yuping county, Guizhou province, China.

2.2 To analyze the playing techniques of *Yuping Xiaodi* in Yuping county, Guizhou province, China.

2.3 To study the music cultural change of *Yuping Xiaodi* in Yuping county, Guizhou province, China.

3. Research Questions

3.1 What is the process of making musical instrument of *Yuping Xiaodi*?

3.2 What are the playing techniques of *Yuping Xiaodi*?

3.3 What is the music cultural change of *Yuping Xiaodi*?

4. Importance of Research

4.1 By studying the process of making musical instrument of *Yuping Xiaodi*, more people can see and learn this traditional craft. It is very important for the transmission of this art.

4.2 By analyzing the playing technique of *Yuping Xiaodi*, it is of great significance to the protection, transmission and development of this national art as well as the enrichment of Guizhou tourism culture and the development of its commercial value.

4.3 By studying the music cultural change of *Yuping Xiaodi*, we can effectively promote the development of local national culture and Chinese national culture, and even let the whole world see its existence and value.

5. Scope of research

In the analysis of instrumental techniques, the researcher will split it into two instruments and divide it into 3 groups of works.

5.1 Works that have basic instrumental techniques.

5.2 Works with intermediate techniques.

5.3 A work with a advance playing technique.

6. Definition of Terms

6.1 Yuping county

Refer to the location in Guizhou province, China.

6.2 Yuping Xiaodi

Refer to two kinds of Chinese traditional bamboo wind musical Instruments (Xiao and Di) made in Yuping county, China.

6.3 Making process

The making process of *Yuping Xiaodi* is roughly divided into four processes: 1) Select material, 2) Model making, 3) Carving, 4) Finished product.

6.4 Playing technique

Refer to 3 levels of techniques; 1) basic techniques, 2) intermediate techniques, 3) advance techniques.

6.5 Music cultural change

Refer to changes in instruments, music, methods and playing techniques. And the role of music on people in the Guizhou society.

7. Conceptual Framework

This dissertation uses *Yuping Xiaodi* musical instrument as the research object. The data is mainly obtained through four research methods of Qualitative, Interviews, Observations, Documents. These data are explained by theories of musicology, ethnomusicology, historical musicology and organology.

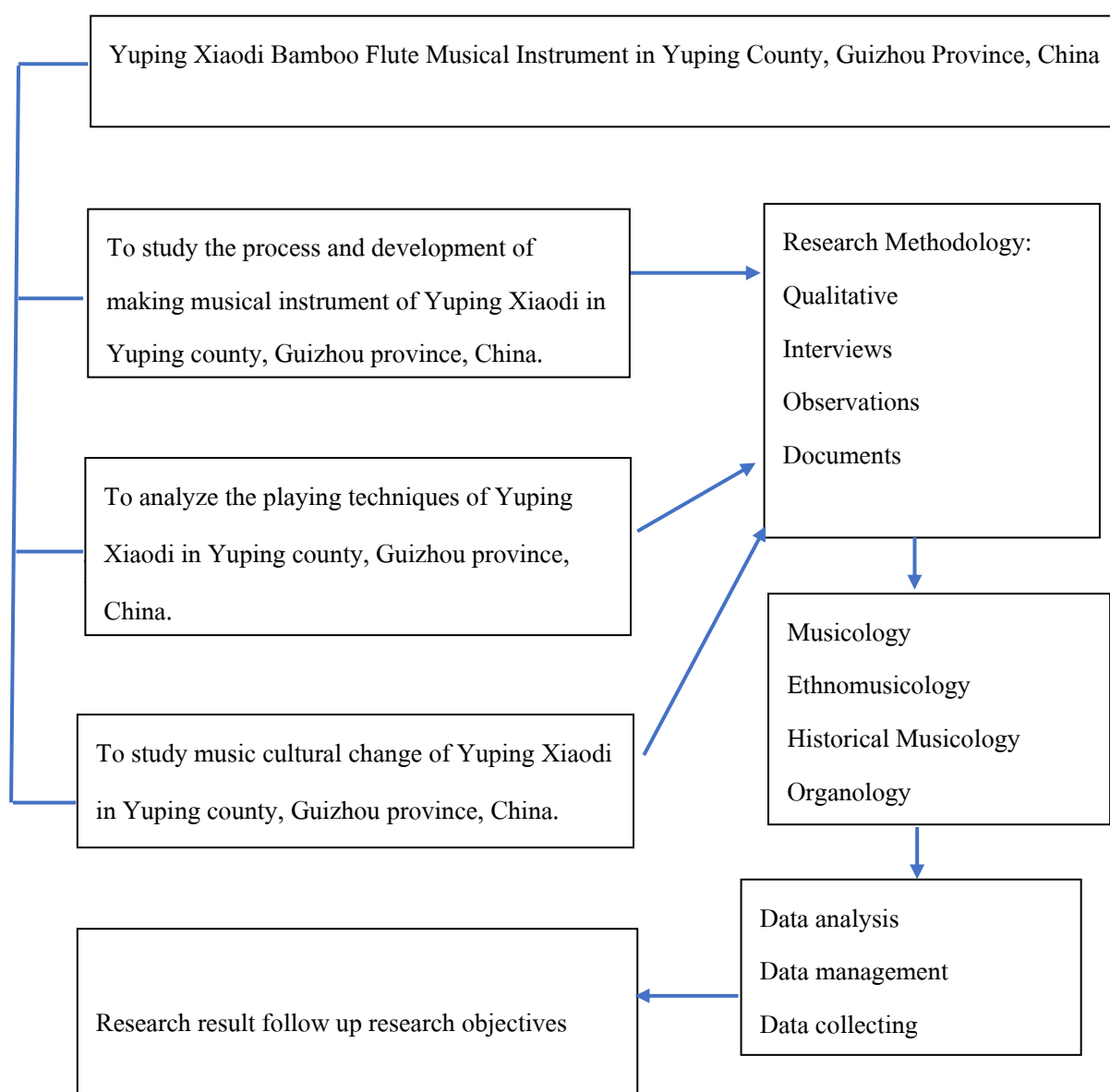


Figure 1 Conceptual framework

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Chapter II

Literature Reviews

This chapter reviews the relevant documents of musical instrument *Yuping Xiaodi* to obtain the most comprehensive information available to be used in this research, the researcher has reviewed it according to the topic and objectives:

1. The General Knowledge of Yuping County, Guizhou Province, China
2. The General Knowledge of Xiaodi in China
3. Society and Culture of Xiaodi Music in China
4. A Musical Instrument of Bamboo Wind Instrument in China
5. The Theory Used in Research
6. Documents and Related Research

1. The General Knowledge of Yuping County, Guizhou Province, China

1.1 City history

Chinese encyclopedia dictionary reference book "*Cihai*" records: "*Yuping Xiaodi*, one of the famous Chinese musical instruments, was created in the late Ming Dynasty." Based on this calculation alone, the history of *Yuping Xiaodi* has been around 500 years. In Yuping, the origin of the Xiaodi is a beautiful legend. According to legend, during the Wanli period of the Ming Dynasty, Mr. Zheng in Yuping met an old Taoist priest who was treated carefully in the Zheng family after he fell ill. One day, Mr. Zheng and the old Taoist priests saw the Eight Immortals playing music and dancing on Shilian Peak in the north of Yuping City, and the two hurried to go. When they arrived, they saw the immortals driving away in the clouds, and Mr. Zheng had the honor to pick up a divine Xiao. The next day, they came to Feifeng Mountain in the southwest of the city. They saw water bamboos (a kind of bamboo name in China). Old Taoists chose water bamboo to make a divine Xiao, and the tones were soft and quiet. In order to thank the Mr. Zheng, the old Taoist taught her the making skills of Xiaodi. Mr. Zheng regarded it as a treasure and passed on from generation to generation. Thus, there is the Xiaodi industry of Yuping today.



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Today, people remember history, and often engrave poems on Xiaodi: "The immortal goes to Yuping to leave ancient tunes, and visitors can imitate friends from overseas." (Wang& X, 2012a)

Yuping County is located in the eastern part of Guizhou Province, China, bordering Hunan Province and belonging to Tongren City, it is called the "gateway to the east of Guizhou province". The county seat is located on the south bank of the Wuyang River. "Wuyang River water is as clear as jade, mountain peaks stand as screens", so it is called Yuping (In English it means Jade and Screen). Yuping County is known as "the hometown of Chinese Xiaodi", "the hometown of Chinese oil tea" "the hometown of Chinese yellow peach" and "the hometown of Dong culture and art". Yuping County covers an area of 515.9 square kilometers and has a population of 136,000. Yuping County is now commonly known as Yuping Dong Autonomous County, it was named Xiongxi in ancient times. The Spring and Autumn Period and the Warring States Period (770B.C.—221B.C.) belonged to the State of Chu country. During the Qin Dynasty (221B.C.—207B.C.) , it belonged to Central Qian City (Qian is the abbreviation of present Guizhou). During the Han Dynasty (202B.C.—220B.C.), it was subordinated to Wuyang County, Wuling City. During the Three Kingdoms Period (A.D.220—A.D.280) , it was subordinate to Wuyang County, Wuling City. During the Sui Dynasty (A.D.581—A.D.618), it was subordinate to Longbiao County, Yuanling City. During the Tang Dynasty (A.D.618—A.D.907) , it was subordinated to Weixi County, Jiang state. During the Song Dynasty (A.D.960—A.D.1279), Pingxidong was set up in Mayang County, Yuanzhou. During the Yuan Dynasty (A.D.1271—A.D.1368), it was subordinate to Sizhou. On March 30, the 23rd year of Emperor Hongwu of the Ming Dynasty (A.D.1390.4.15), Pingxi Wei was set up. In the 29th year of Emperor Wanli of the Ming Dynasty (A.D.1601), Pingxiwei was transferred to Guizhou. On March 30, the fifth year of Emperor Yongzheng of the Qing Dynasty (A.D.1727), Pingxiwei was changed to Yuping County. In the 12th year of the Republic of China (1923), it was directly under Guizhou Province. (CPPCC Yuping County Committee, 1993)

1.2 Geography

Yuping County is located between $108^{\circ}34' - 109^{\circ}09'$ east longitude and $27^{\circ}28' - 27^{\circ}31'$ north latitude. The county is close to Xinhuang County in Hunan Province in the southeast, Zhenyuan County and Cengong County in Guizhou Province in the west, Tongren City and Wanshan Special District in Guizhou Province in the north, with a distance of 36 kilometers from

the east to the west and 42 kilometers from the north to the south, with a total area of 516.6 square kilometers. Yuping county is located in the Yunnan-Guizhou plateau to the west hill sloping transition area, between low mountainous hilly ground, more between 400-600 m above sea level, the highest is 950m, the lowest is 315m. Yuping County is a flat dam, hilly, mountainous terrain, under the strata in Yuping County, the Paleozoic is dominant, and the exposed strata are mainly covered by Cambrian, Sinian and Quaternary. Outcropped rocks include carbonate rock, sand shale, sedimentary rock, metamorphic rock, and the parent rock of pedogenesis is dolomite and limestone. Most of the soil is thick, and the viscosity is heavy and acidic. The stratigraphic lithology is interbedded with sandy sericite and siltstone, and the soil is mainly yellow soil developed from dolomite. The overlying soil is the Quaternary alluvial soil and alluvial soil, which is composed of sand, gravel and a small amount of clay. The composition is mainly dolomite, limestone and sandstone, with about 50-60% content. The gradation is good, motley, wet, loose and poorly cemented. The thickness is generally 0.50~2.10m. The Xia Cambrian Shileng Leng Formation is composed of gray and gray medium thick fine-grained dolomite, which belongs to soluble rock with an occurrence tendency of 120° and an inclination Angle of 10° . Yuping County belongs to the subtropical monsoon humid climate, with rich heat, abundant rainfall, suitable lighting, heat and rain at the same season climate characteristics. Due to the influence of geographical location and topography, it is often affected by the cold air invading from the north or northeast in winter, and it is often controlled by the western Pacific subtropical high in summer. In early summer, the front is active frequently and there are more thunderstorms. In midsummer, under the influence of the western Pacific subtropical high, summer drought often occurs. Spring is a period of conflict between winter monsoon and summer monsoon, characterized by thunderstorms, gales, hail and cold weather. Autumn is milky. The climate is characterized by: no severe cold in winter, no intense heat in summer, unstable temperature in spring, steep drop in temperature in autumn and hot rain in the same season. Climate elements vary greatly from year to year, and there are many disastrous weathers, including drought, rainstorm, flood, hail, frost and so on. The annual average relative temperature is 79%, the annual precipitation is 1174.1 mm, and the annual exposure time is 1206.7 hours. County throughout the year the largest frequency of the Middle East wind, The Times for the northeast wind. The average annual wind speed is 1.0 m/s. (CPPCC Yuping County Committee, 1993)

Wuyang River, a tributary of the Yangtze River and a tributary of the Yuanjiang River, has a mouth that is the boundary point between the Yuanjiang River and the Qingshuijiang River in the upper reaches of the Yuanjiang River. The source of Wuyang river originated in Changlin township, Weng'an county, Guizhou province. It flows through Huangping county, Shibing county, Zhenyuan county, Cengong county. It is produced in Guizhou province in the Yuping county and flows into Hunan province, 258 km in the Lancang river, the basin area of 6480 square kilometers. The size of Wuyang River in Yuping County is 80-120 meters in width and 46 kilometers in length, involving nine counties (special zones), including Weng'an County, Huangping County, Zhenyuan County, Yuping County, TonRen City, Shiqian County, Cengong County, Jiangkou County and Wanshan Special Zone. The main stream of the Wuyang River is rich in hydropower resources and has basically realized cascade development. The Wuyang Lake, Guanyinyan, Hejitan and other stations have been built successively. The mountains around Yuping County are rich in vegetation, which is characterized by diversity and is dominated by pine and bamboo. The bamboo used in the *Yuping Xiaodi* is a fine water bamboo rarely found in other places. This kind of water bamboo mostly grows in the interlaces between streams and rocks, rarely sees sunlight, and is extremely strong. It is characterized by long and uniform bamboo joints and small and round bamboo tubes. The instrument, which is made of bamboo, is played effortlessly and has a smooth, clear tone. (Yang & R. G, 2017)

1.3 People, livelihoods, occupations, traditions

In 2020, the county has a permanent population of 155,800 and a registered population of 172,176. Of the registered population, 80,122 were urban and 92,054 rural. There were 90,428 males and 81,748 females, 8,680 more males than females, and the male-to-female ratio (100 females) was 110.62%, down 0.06 percentage points from the previous year. The birth rate was 9.16 per thousand, 0.93 thousand points lower than the previous year. The mortality rate was 5.28 per thousand, 0.65 thousand point higher than the previous year. The natural population growth rate was 3.88 per thousand, down 1.58 thousand points from the previous year. Yuping County is a gathering place of ethnic minorities. There are at least 26 ethnic minorities living here. They are Yi, Bai, Dai, Zhuang, Miao, Hui, Lisu, Lahu, Wa, Naxi, Yao, Tibetan, Jingpo, Bulang, Buyi, Achang, Hani, Xibe, Pumi, Mongolian, Nu, Jino, Deang, Shuiman, Dulong.etc. (<https://www.hongheiku.com/xianjirank/gzxjrk/5431.html>)

1.4 Art, music and performance

Yuping county has rich national folk culture, and has left many cultural essence in the centuries of history, including Folk songs, such as Wine songs, Wedding songs, Dune tunes, Haozi and other folk songs. Dance such as flower-lantern dance, tea-lantern dance, flower-stick dance, clam dance and Yangko dance, opera such as Nuo opera and Wai Drum opera, folk art such as Ji language, lotus flower fall and funeral song form a perfect picture scroll. With its unique concept, *Yuping Xiaodi* deeply integrates into it, and jointly creates the splendid culture of Yuping nationality and folk.

After hundreds of years of transmission and development, *Yuping Xiaodi* has not only strengthened its industry, but also nurtured rich cultural deposits of Dong Township and become a bright pearl of Dong Township and even of China. Zhang Weiliang, Professor of China Conservatory of music, President of China National Orchestral Association and Chinese famous Xiao and Di player, pointed out at the 2010 China *Yuping Xiaodi* art seminar: "*Yuping Xiaodi* is a famous bamboo wind instrument in China, a treasure of national Musical Instruments and a treasure of world musical culture. It is famous for its beautiful tone, exquisite carving and long history. It is the crystallization of multiple ethnic cultures such as Dong, Han, Miao and Tujia in Yuping, and has high historical, cultural and artistic value." (Wang& X & Luo, 2010)

Before the founding of the People's Republic of China, the cultural activities of *Yuping Xiaodi* were basically carried out spontaneously, and Xiaodi playing was mainly popular in the streets and lanes. After the founding of the People's Republic of China, under the care and support of the Party and the government, the Yuping County Cultural Center was established in 1951, and an amateur art troupe was set up. Mass artistic activities were carried out in an orderly manner, among which Xiaodi playing was one of the performances and accompaniment items. (Hu& P. X. & Li& N. N, 2016)

In 1983, Yuping County organized the first national folk art performance, which greatly enriched the cultural life of the people of Dong Township. In 1983, Yuping county organized and held the first national folk art performance, which greatly enriched the cultural life of the people in Dong township. In 1984, 1986 and 1990, there were three times of *Yuping Xiaodi* art performances in the whole county, each with more than 100 participants and more than 300 pieces of music, which enriched the connotation of Xiaodi culture. In order to further promote the

sustainable and healthy development of *Yuping Xiaodi* culture, cultivate *Yuping Xiaodi* playing talents, and create a more rich *Yuping Xiaodi* culture atmosphere. With the great attention of the Yuping county Party committee and the government, in 1999, Xiaodi courses were set up in primary and secondary schools with experienced teachers teachers in the county. A large number of amateur literature and art teams were trained to enrich the reserve force. In 2006, in order to thoroughly implement the spirit of the document "opinions on further strengthening ethnic work and speeding up the development of ethnic minorities and minority areas" issued by the provincial Party committee and the provincial government, and the overall guiding ideology of "building a cultural county" by the Yuping county Party committee and the county government, an organization of "ethnic culture into campus activities" was established with the County Bureau of people's affairs, the Bureau of education, the Bureau of culture and broadcasting, and the Bureau of sports as the main bodies, Four junior middle schools and eight Central Primary Schools with rich Dong culture and simple folk customs are selected as the demonstration schools for national culture to enter the campus. In the process of implementation, Xiaodi culture was focused on campus, and 1-4 volumes of Xiaodi were edited and published in August 2011. As a local teaching material for primary and secondary schools in Yuping County, Guizhou Province, Xiaodi was loved by teachers and students, and effectively promoted the development of Xiaodi culture. Since 2005, Yuping county has held the *Yuping xiaodi* performance competition and "*Yuping xiaodi* campus art festival" every year, as well as the large, small and medium-sized artistic performances and the Yuping *Yuping xiaodi* festival. (Hu& P. X. & Li& N. N, 2016)

Since 1991, the people's government of Yuping county has been greatly supported by the relevant departments of the state, province and city, and has successively organized several large-scale *Yuping xiaodi* art festivals and a series of related activities in Yuping by adopting the measures of "inviting in" and "going out", which have achieved great effects and far-reaching influence. (Wang& X, 2012b)

2. The General Knowledge of Xiaodi in China

Xiao and Di (Hereinafter referred to as "Xiaodi ") are Chinese national musical instruments, which are made of bamboo of different lengths and thicknesses. The structure of

Xiao and Di is very similar. The fundamental differences are as follows: the vertical flute is Xiao with holes and no membranes; Transverse blowing is Di, there are holes with membrane.

The history of Chinese Xiaodi is the oldest among all the cultural forms. China has a history of five thousand years of civilization, but it can be traced back to the history before written records. The Chinese Xiaodi is a prominent example. It is well known that the Jiahu culture Gudi in Wuyang, Henan Province, which was born eight thousand years ago, can be said to be the originator of Chinese Xiaodi, and it created the forerunner of Central Plains culture. Chinese flute not only runs through the whole history, but also from the emperor, scholar-officials, down to the common people, it is widely loved by all classes.

According to the research of Zhao Songting, a famous Di player, the Gu-di (a kind of Di made of bone) unearthed in Hemudu, Zhejiang Province have a history of more than 7,000 years. This fully shows that the Di is one of the earliest Musical Instruments in China. The Gu-di is made of the limb bones of birds, with a length of about 7 cm and a diameter of 6~8 mm respectively. There are two holes Gu-di and three holes Gu-di. Theoretically, the structure of the Gu-di could have formed a pentatonic scale, producing more than four different pitches. It can be inferred that, as early as the Neolithic Age more than 7,000 years ago, our ancestors had reached a certain height in the production of Musical Instruments and the practice of music discipline.

Although bone and bamboo do not belong to the same species in terms of materials, Gu-di can be considered as the original ancestor of Xiaodi according to the shape, structure and sound principle of Gu-di above. There are two reasons. First, the Gu-di stomata in the tail, is a wind instrument. Second, the sound method of the Gu-di is that the air flow directly enters the tube through the blowing hole, so as to make the air inside the tube vibrate and sound. Most experts believe that vertical blowing and direct air flow into the tube are the basic characteristics of Xiao. (Zhou& S. B, 2002)

The Di-zi, Di, Heng-di, or Zhu-di-literally bamboo flute, is the transverse flute of the Han Chinese and one of the most popular types of flutes in traditional Chinese music. Di-zi is mostly made from bamboo and is built according to a relatively simple acoustic principle. The body is a straight piece of bamboo with twelve holes drilled along the side while the left end is sealed by a piece of cork. In the middle portion of the pipe are six finger holes. The embouchure hole is placed towards the left end while two auxiliary tone holes are placed towards the right end

to increase the volume of the instrument. In addition, there is a separate tone hole between the top finger hole and the blow hole for the placement of the membrane. The membrane is a piece of dried thin membrane usually taken from the inner lining of a cane and it is glued tightly over the top of the hole. (Lau& F. C, 1991).

There is no definitive date for the emergence of made of bamboo, but according to historical records, people began to make bamboo Xiaodi as early as the primitive clan period and used bamboo Xiaodi in a large number of music and dance works. Some ancient music and dances simply use the words related to Xiaodi as the title of their works. It is said that the emperor ordered Ling Lun, a musician, to cut down bamboo to make wind instruments on the Kunlun Mountain in the Spring and Autumn Period. Later generations also arranged wind instruments made by Ling Lun together to form the later Pan xiao. During the period of Yu Shun, about 4,000 years ago, people created a large musical dance called Da Xia to celebrate Yu's virtues in controlling the floods. During a musical performance, one dancer holds a feather, the other a bird. The bird was later called the Pan xiao. (Lin& K. R, 2009)

In the Western Zhou Dynasty, the ancients divided the Musical Instruments into eight categories: metal, stone, silk, bamboo, gourd, earth, leather and wood, or "eight sounds". It can be seen that bamboo Xiaodi is one of them. Because the instrument category is numerous, there were even musicians who specialized in performing and teaching Xiao in Western Zhou Dynasty. (Du& Y. X, 1987)

According to the records in the "Book of Music", a Di with six press holes on the front and a bamboo membrane hole, called the Seven-star Di, appeared in the Tang Dynasty. At this point, the classification of Xiao and Di was finally realized. Before that, whether it is vertical blowing or transversely blowing, in the sound principle and timbre. There is no essential difference in volume. With the gradual expansion of the orchestra arrangement, the Di, as the main melodic instrument, is difficult to play an important role in highlighting the melody due to its low volume. However, the appearance of Di with flute diaphragm is a great breakthrough in the timbre and volume of bamboo wind instruments. It can be believed that the appearance of Di with flute diaphragm is a reason for people to explore the variety of musical instrument timbre and expand the range and volume of musical instrument. The creative results of musical

expression and application range. At the same time, this kind of creative practice also made the classification of Xiao and Di finally realized. (Zhang& W. L, 2011)

Di and Xiao are basically the same in basic structure, pronunciation principle and tone setting method. But there are great differences between the two in timbre, volume and range. In addition to Di has the round, soft and other timbre characteristics, but also has a clear tone. Bright, wide vocal range, large volume and other personality characteristics. In addition, Di is lively, Simple and true artistic temperament. In the category, the variety of Di is complete, there are Bang Di and Qu Di. Therefore, both in the folk music practice activities, or in the large-scale instrumental ensemble, Di has been extremely widely used, produced a large number of excellent works. (Zhou& S. B, 2002)

3. Society and Culture of Xiaodi Music in China

3.1 Primitive Ceremony Culture and Xiaodi music in China

Ritual and music culture is one of the important components of Chinese traditional primitive Ceremony culture. "Ritual" refers to all kinds of etiquette and norms in social interactions, and "music" refers to music and dance. In feudal society, rites and music were a system that people had to learn and obey. The ruler ruled the country with ritual and enlivened people's lives with music, creating brilliant achievements in the development of human civilization. At the end of the 1970s, Chinese archaeologists excavated ancient tombs in the Neolithic Age in Jiahu Village, Wuyang County, Henan Province. In the tombs, they were surprised to find *Gudi* made of animal tibia, which are seven holes like modern Di and can play wonderful music. From this major archaeological discovery, we can see that as early as in the New Age, human beings invented Di and understood music, which shows the important role of *Gudi* in human life at that time. The *Bianzhong* unearthed from the tomb of Marquis Zeng Houyi in the Warring States period can be called the model of large-scale ritual music in the ancient time of Qin period (221 B.C). when the First Emperor of Qin united China). The archaeologists found that *Chi* (An ancient term for Di) was placed together with the *Bianzhong*. This archaeological discovery can prove that the Di, as one of the ritual vessels, shows the great achievement of Chinese ritual music culture, plays the ritual music culture of the Chinese nation, and transmits the glory of Chinese civilization. (Yan& W. D, 2013)

3.2 Traditional opera performance and Xiaodi music in China

Many traditional Chinese operas use Xiaodi as an accompaniment instrument, for example, Peking Opera, Huangmei Opera, Yue Opera, Errentai, Huai Opera, Qinqiang Opera, Henan Opera and so on. Xiaodi are one of the oldest ethnic Musical Instruments in China, historically, Xiaodi with its unique cultural characteristics of music, in the history of the development of our national instrumental music occupies an important position, in our country has played an irreplaceable role in traditional opera music, it has distinctive national geographic features, over the years, is widely used in Chinese opera performance accompaniment. Chinese Xiaodi, with its beautiful tone and distinctive features, is widely popular in all ethnic areas of China. From the Song Dynasty to the Ming and Qing Dynasties, Xiaodi has become an accompaniment instrument for many kinds of opera music, especially Di. In recent years, modern western Musical Instruments have been constantly integrated into traditional Chinese opera bands, but the role and effect of Xiaodi in Chinese opera music is increasingly obvious, its style and characteristics are irreplaceable, and it is an indispensable and important instrument in Chinese opera music. Xiaodi plays an important role in the performance of Chinese opera as following: setting off the atmosphere and stating the melody. Hold the song and balance the tune. Rhythm control, foil the plot. Intersperse and fill, icing on the cake. (Gu& Y. G, 2017)

3.3 literature and Xiaodi music in China

Xiaodi are the most popular and influential edge wind instrument in China. From the perspective of historical documents, the history of Chinese Di is the oldest among all cultural forms. As a very representative traditional Chinese musical instrument, Xiaodi instruments are closely related to literature, especially poetry, from the composition mode to the performance. Since the *Yuefu* of the Han Dynasty, Xiaodi has participated in the three performance forms of *Xianghe*, *Guchui* and *Hengchui*, and has widely entered the musical and cultural life of literati. Moreover, the improvement of Xiaodi instruments and the creation of Xiaodi music have been accompanied by the development of literature. Yan music and poetry flourished in the Tang Dynasty. On this basis, the most mature form of ancient Chinese music and literature -- *Qu Zici* came into being. The prosperity and maturity of *Qu Zici* in Song Dynasty are closely related to the Xiaodi. In the process of the creation and spread of *Qu Zici*, Xiaodi music is one of the important sound and emotion communication media. The popular Xiaodi music at that time, such

as "Guan Shanyue", "Mei Hualuo", "Zhe Yangliu" and so on, have also become cultural symbols with fixed meanings due to their respective musical and cultural connotations. In the course of the development and change of Xiaodi music, literature has always been complementary to and accompanied with it. The change of literati's creative concept and style in music literature affects the change and development of music itself to a certain extent, and the dissemination of literary works greatly promotes the popularization of music. From the ancient times to the Ming and Qing Dynasties, Xiaodi music has played an important role in the history of Chinese music and music literature, and played an important social function in different periods and regions of Chinese history, and exerted a far-reaching and extensive influence on the spiritual and cultural life of literati. Through analyzing the position and function of Xiaodi music in various forms of music literature, we can see the deep connection between Chinese ancient literature and music. (Zhu& J, 2008)

3.4 Religious culture and Xiaodi music in China

Xiaodi music is always closely related to religion and folk culture in the historical process of its generation and development. Its historical process is also closely related to the four traditional music systems of ancient China, such as court, literati, religion and secular music. It shows a multi-level social function characteristic of both elegant and popular tastes. In the music that shows the characteristics of Chinese religion and folk culture, Xiaodi culture has been given another meaning, which is mainly reflected in religious ceremonies and folk festivals and other activities. In Chinese religious rites, Di is used as a dharma instrument. In religion, people endow Di with a certain mystical color, believing that Di can communicate with God, and the sound of Di can educate all sentient beings. In religious music, people often combine with local folk music, which not only helps religious music to be easily accepted by the people, but also enhances its influence on the people. The clear and refined Di music not only conveys the will of God in the religion, but also enhances the hearts of the masses to worship the religion piously. (Li& B. Z, 2008)

3.5 Folk culture and Xiaodi music in China

Xiaodi music not only plays an important role in Chinese religious culture, but also plays a very important role in Chinese folk culture. In folk culture, Xiaodi are usually used in weddings, funerals and large-scale custom festivals. As the leading instrument of folk drum and Xiaodi

music, Di plays an important role. Among them, the typical folk drum music of *Xi'an Drum music* and *Guangdong Drum music* are included. These folk culture activities are organized in various forms and integrate folk art features of other places to effectively show the charm of folk art to the public, so that people can enjoy the rich Chinese ethnic customs in the wonderful music and melody. Chinese folk culture is rich and colorful and varied. In folk festivals such as weddings, funerals and other folk festivals, Xiaodi, as the leading instrument of folk drum and flute music, has important value and significance. The typical ones are *Xi'an Drum music*, *Jiangsu Shipan Drum music*, *Guangdong Dietao Ancient Music*, etc. They have both the origin of history and the characteristics of The Times. These secular bands have a variety of forms of organization and are widely used in Chinese social customs, rituals and traditional festivals in combination with other folk arts forms. (Yan& W. D, 2013)

4. A Musical Instrument of Bamboo Wind Instrument in China

4.1 The type of wind musical instrument in China

The national wind musical instruments in China are mainly made of bamboo, wood, clay and other materials. In addition, some instruments are made of different materials. There are many kinds of wind musical instruments in China, and their forms are different. It is an important category in the four categories of Chinese national Musical Instruments: wind music, pluck music, string music and percussion. The wind instrument is used for solo, ensemble and accompaniment of various operas and dances. It is also commonly used in traditional folk music.

From the principle of pronunciation, the Chinese national wind musical instruments can be divided into three types: one is to blow breath directly into the blowing hole to stimulate the vibration of the air column in the tube cavity and the pronunciation, such as Xiao, Panpipe, Di, Xun, Shakuhachi; The second one is the one with a whistle, through which the breath is blown into the cavity to stimulate the vibration of the air column in the cavity. Such as Suona horn, Pipe, etc.; There is another type of instrument in which the breath passes through the reed and is pronounced with the reed and the air column in the lumen. Such as Sheng, Lu Sheng, Bawu, Cucurbit flute. (Lin& J. Q. & Liang. J. L, 2002)

4.1.1 The Xun of wind musical instrument in China

Xun is an ancient wind instrument made of clay. It is one of the earliest musical instruments that can play melody in China. Xun instrument originated in China in ancient times, developed in the Xia Dynasty and flourished in the Shang Dynasty. Since then, its development has entered a period of decline. In the early Warring States Period, Xun was used for court sacrifices. After the Qin and Han Dynasties, the Xun was mainly used for court music. After the Han and Tang Dynasties, the development of Xun showed a strong color of traditional culture. Until the Ming and Qing dynasties, Xun, as a representative of traditional culture, has shown a combination of cultural symbolism and artistic appreciation of the exterior. Contemporary Xun has gained a new development in the new period after the reform, and shows a youthful development trend, worthy of attention and vigorous development of the music industry. (Zhang& L, 2017)

Chinese Xun is a closed-mouth wind instrument with a hollow ball as the main body of the instrument. It has a blow hole just above it and several holes on the front and back to play the scale of modes. Legend has it that the Xun originated from a hunting tool called the stone meteor. The primitive people threw stone meteors to strike their prey when they were chasing wild animals. Some hollow stone meteors made a sound during the throwing process, so people found it interesting and made it into a wind instrument. Xun was first made of earth and has evolved into a variety of materials. At present, the materials used in Xun include stone, clay, porcelain, bone head, bamboo, jade, wood and so on. At the same time, Xun technology is becoming more and more mature, its shape is not limited to the shape of the original stone meteor, but more and more beautiful and diversified. Common shapes are pear - shaped, ox - head - shaped, gourd - shaped, oval - shaped and tubular. (Chen& X, 2019)

According to the number of sound holes, there are eight holes, nine holes, ten holes and so on. Now ten holes are more popular. The range of Xun is not fixed. It depends on the number of holes. The more holes there are, the more sounds there are. The range of ten holes Xun is from bass sol to treble re, eight holes Xun is from bass sol to midrange la or midrange si, and nine holes Xun is from bass sol to treble dol. The playing method of Xun is: press the back two holes with your thumb, and press the front hole from bottom to top with your little finger, ring finger, middle finger and index finger. When the little finger does not press the hole, it should be

naturally placed at the bottom of Cuan to support the Cuan body. When pressing the hole, each finger must be tight, without air leakage, and avoid too loose or rigid fingers. The timbre of Xun is deep, sad, continuous, with a unique musical quality. Because of the extraordinary timbre, the ancients in the long-term artistic feeling and comparison, gave the Xun and Xun performance a kind of sacred, elegant, mysterious, noble spiritual temperament. (Zeng& S. J, 2010)

The famous performers of Xun in China are Dai Ya, Liu Fengshan, Liu Kuanren and Zhang Ronghua, Etc. The representative works are “Suwu Shepherd” “Three lanes of plum blossom” “Regrets of the Lover Stars”, Etc.

4.1.2 The Suona horn of wind musical instrument in China

Suona horn is a double-reed wind instrument, which was introduced into China from Persia and Arabia in the 3rd century AD. According to research, Suona horn was popular in Xinjiang in China during the Jin Dynasty (A.D. 265-A.D.420). Some Chinese scholars believe that Suona horn was first produced in Xinjiang, China. Now the Suona horn is popular all over China, is a very important wind instrument in folk wind and percussion music, at the same time in the local opera accompaniment also has a wide range of applications. Suona horn is commonly known as trumpet. The length of one foot five inches or so is called big Suona horn, and the small Suona horn is also called Haidi. Suona horn is composed of three parts: tube body, loudspeaker and mouthpiece. Tube body is a wooden conical pipe, the top thin bottom thick, good Suona horn multi-purpose mahogany, rosewood, ebony. Tube body has eight sound holes (seven before and one back). The lower end of the tube is connected with a copper trumpet trumpet, also known as the Suona horn bowl. The upper end of the tube body is inserted with the core, which is made of thin copper plate and is in the shape of a fine tube. The upper part of the stamen is connected with a flaky gas disc and a reed whistle is inserted at the upper end.

The timbre of Suona horn is loud, volume is strong, suitable for cooperation with gongs and drums or bands. Suona horn tone has a masculine and strong local flavor, in weddings, funerals and other folk activities are indispensable it. It can be lively and cheerful, but it can also be painful.

The playing techniques of Suona horn mainly include portamento (refers to portamento with breath, portamento with fingering), vomit (single vomit, double vomit, three vomit), flower tongue sound, Xiao sound, throat sound, etc. Circulation breathing technique is a

special technique of Suona horn performance, which means that in the process of playing, the nose inhales synchronously, so as to achieve the effect of continuous air flow and non-stop performance. Sometimes a piece of music can be completed in one breath. Among the playing techniques of Di, there is also the method of circulation breathing technique, which was transplanted from Suona horn by master Zhao Songting in the 1950s. Suona horn is also good at imitating the singing of birds and chickens, and even the singing of various operas. It's very vivid and lifelike. (Lin & J. Q. & Liang, J. L, 2002)

In China, the famous Suona horn players include Ren Tongxiang, Hu haiquan, Liu bingchen, Chen jiaqi, Zhong Dong and Zhang fu shen, etc. The representative works of Suona horn include "Bai Niao Chao Feng", "Huang Tu Qing", "Zou Xi Kou", "One Flower", etc.

4.1.3 The Sheng of wind musical instrument in China

Sheng is the only instrument that can play harmony in Chinese traditional wind instruments. Sheng has beautiful music and rich harmony, which is widely used in many operas, folk arts and folk utensils. It's used in Music Ensemble and song and dance music. In addition, Sheng Solo has rich artistic expression, is a very good solo instrument.

About the history of Sheng, the earliest historical records of Sheng are oracle bone inscriptions of the Yin Dynasty more than 3000 years ago. In 1978, several Sheng unearthed more than 2400 years ago from the tomb of Marquis Yi of Zeng in Suixian County, Hubei Province, China. This is the earliest one found in China. (Li & R, 2019)

Sheng is composed of Sheng Dou, Sheng Miao and Sheng Huang. Sheng Dou is connected with Sheng mouth, which is made of thin copper plate and welded as a whole. This is the passage through which the air flows. Moreover, all Sheng Miao are inserted into Sheng Dou in a certain order. Sheng Miao, also known as Sheng tube, is inlaid with Sheng spring made of thin copper at its lower end. When there is air flow through, the reed is excited by the air flow, causing vibration and pronunciation. The length of the Sheng seedlings inserted into the Sheng bucket is at random, just like two parallel tails. In the long-term evolution, there have been many changes in the shape, size and number of Sheng seedlings: Sheng Dou is round and square; Sheng mouth is long and short. At present, 17 spring, 21 spring, 24 spring plus key Sheng and 36 spring plus key Sheng are widely used. In addition, since the founding of the people's Republic of China, there have been new varieties such as Zhongyin Baosheng, bass Baosheng and keyboard

paisheng. Sheng is a wind instrument with reed. It has sweet and soft tone. It has the dual nature of wind instrument and reed instrument. Because of its timbre characteristics and unique function of playing harmony, Sheng plays an irreplaceable role in the national band, which can harmonize the three kinds of musical instruments: blowing, pulling and playing.

Sheng can be divided into oral skills and finger skills. Oral technique is about the pronunciation of luck. Different from the general wind instruments, playing Sheng not only blows but also sucks, which consumes a lot of air, so we should master the correct breathing method. Sheng's oral skills include flat blowing with smooth pronunciation, spitting (single tongue spitting, double tongue spitting and three tongue spitting) used to express lively, jumping and fast music, flower tongue playing broken sound, soft and even wavy voice, etc. The finger skills of Sheng include single tone, double tone, chord, glide, etc. There are top-up and bottom-up calendars, which are often used in cheerful music. (Chen& Z. S, 2006)

In China, famous Sheng performers include Hu Tianquan, Mou Shanping, Xu chaoming, etc. The representative works of Sheng include “Feng Huang Zhan Chi”, “Cao Yuan Qi Bing”, “Yi Meng Shan Ge”, etc.

4.1.4 The Panpipe of wind musical instrument in China

Panpipe is an ancient wind instrument in China. Panpipe is named after the arrangement of several pipes of different lengths. Each pipe has only one sound, and as many pipes as there are, it has as many sounds. The tone of Panpipe is clear and pleasant, beautiful and pleasant to the ear. In ancient times, Panpipe was also called Xiao. From the spring and Autumn period to the Qin and Han Dynasties, Panpipe was popular for nearly a thousand years. On the rubbings of the Han Dynasty, we can see the scene of the Han Dynasty military music team playing "riding wind": a powerful cavalry team, knights holding a variety of musical instruments to play, including Panpipe. From the southern and Northern Dynasties to the Sui and Tang Dynasties, Panpipe played an important role in the court music. After the Song Dynasty (960-1279 AD), the folk music was lost, and it was only used for court music. At present, the earliest Panpipe unearthed in archaeology is the Warring States Panpipe unearthed from the tomb of Marquis Yi Zeng in suixian County, Hubei Province. It has been more than 2400 years. (Zhao& L, 2002)

In recent years, we have studied, imitated and improved the Panpipe, which is almost on the verge of extinction. At the same time, we have created a solo for the Panpipe, which makes the Panpipe shine again in the music stage. Panpipe has rich artistic expression, whether it is beautiful, melodious lyric music, or lively music, are also loved by people.

4.1.5 The Shakuhachi of wind musical instrument in China

Shakuhachi, a traditional Chinese wind musical instrument, was introduced to Japan in Tang and Song dynasties. It is made of bamboo, with cinnabar on the inside and big lacquer on the outside. Today, it has five holes (the first four and the last one). It is a wind instrument with edge vibration and air blowing. It is named after its length of one foot and eight inches. Its timbre is desolate and broad, and it can also show the artistic conception of ethereal and quiet. Shakuhachi, also known as Dong xiao, Nan xiao and Nan Shakuhachi, is the main musical instrument playing melody in Nan yin.

Shakuhachi was also known as "Xiao Guan" and "Shu Di" in ancient times. Shakuhachi has a long history and is an important musical instrument in Tang Dynasty. After the Song Dynasty, Shakuhachi gradually disappeared in the vast areas of our country, but in Quanzhou, Fujian Province, which is far away from the Central Plains and in a corner, the spread of Shakuhachi never stopped. (Chen& Z. S, 2006)

To make Nan yin Shakuhachi, carnation, *Guan yinzhu* and *Moso* are the best. Take a section of bamboo close to the ground and cut it from the root. According to the ancient system, it has a total length of one foot eight inches (one is Lu Ban Chi, the present Nan yin Chi Eight is about 575-580mm, which is exactly the same as the official ruler of Ming and Qing Dynasties). In this specified length, the natural slub should be ten or nine knots (between slubs is called mesh); for slubs with holes, there are two holes in one knot. In addition to the above requirements, bamboo materials should also meet the requirements of temperament. It can be seen that bamboo materials suitable for *Nan-yin* Shakuhachi are always rare.

The most famous Shakuhachi performers in the world are kinohachi, and dozan Fujiwara from Japan. The representative works are "Xu Ling", "Xu Kong", "Dong Feng", etc.

4.1.6 The Cucurbit flute of wind musical instrument in China

Cucurbit flute, is a musical instrument of ethnic minorities in Yunnan province, China. Cucurbit flute originated in Lianghe County, Dehong Dai and Jingpo Autonomous

Prefecture. It is mainly popular in Dehong and Lincang areas of Yunnan where Dai, Achang, WA, De'ang and Bulang people live together. It is rich in local color. It is often used to play folk tunes such as folk songs. Cucurbit flute can be divided into three types: high, medium and low. Its timbre is unique and simple, its appearance is simple and exquisite, and it is easy to learn. It is loved by many music lovers.

Cucurbit flute has a long history, its origin can be traced back to the ancient time of Qin period. In structure, it still retains the remains of ancient musical instruments. Like the ancient Xiao, it can be used to produce continuous intervals of five degrees. But its director has opened seven sound holes, which is very similar to the later Xiao and Di, and shows its radical in history. (Li& C. H, 2002)

In China, the performers of Cucurbit flute include Ke Dequan, Wang Tongxian, Li Zhongpei and Li Chunhua. The famous Cucurbit flute songs include "Phoenix Tail Bamboo in the Moonlight", "marriage oath", "Yao dance music" and so on.

4.2 Physical Characteristics of Chinese Wind Instrument

Chinese wind instrument has a history of seven or eight thousand years. It is an important branch of Chinese national music system. Wind instrument has been closely linked with the development of music and people's life since it came into being. The emergence of new wind instruments in various dynasties is a sign of the development and progress of national music. (Zhao& L, 2002)

Wind instrument is a kind of musical instrument that is often used in performances. Whether it is the traditional folk musical instrument Xiao and Di or the western musical instrument saxophone, it belongs to one kind of wind instrument. The sound of a wind instrument is mainly generated by the vibration of the air column in time and space when playing the instrument, rather than simply blowing air into the pipe to make the sound, so it is necessary to add some special devices to the pipe mouth. With special equipment, the instrument produces a series of continuous streams of air as the person blows, which guide the air column to vibrate and produce the sound we need.

In order to distinguish the pronunciation body, it can be divided into three categories: Qi spring, Lu spring and Lip spring. First of all, the physical principle of air spring is that the air flow issued by the player of the musical instrument is used as the pronunciation body. Musical

instruments using this kind of physical principle mainly include Flute, Di, Xiao and so on. In this type of instrument, a stream of air is blown into the hole, and the air collides with the edge of the hole, causing the air to split. About 50% of the air flows out of the hole, and 50% of the air stays in the tube, creating a vortex effect that produces a series of sounds. This physical phenomenon can be described by using such a scenario. When the wind blows through the flagpole, it will also produce vortex effect. The flagpole will flutter with the wind and make a sound continuously, which is the sound principle of "edge tone".

Secondly, we analyze how reed sounds. The sound it makes is really produced by this special reed. The upper end of the reed can vibrate with the air flow, while the lower end of the reed is mounted on the instrument. When the air flow enters the reed, the principle of fluid mechanics states that the flow rate increases and the pressure decreases. To illustrate how it works, we hold a piece of paper in each hand, hold the two sheets parallel and apart, and let them hang freely. Then we blow air into the gap between the two sheets of paper. It can be observed that the two sheets of paper are constantly getting closer. This is because the flow rate between the two sheets of paper is constantly increasing and the pressure is constantly decreasing during the process of blowing. Under the pressure of air, the two sheets of paper will continue to move closer to each other. The working principle of reed is the same as this. During the performance of reed, we will see the reed open and close, so as to reciprocate to form an open and close situation, thus generating the vibration of air column.

Finally, the vocal body of lip reed is the lips of the player. The instruments that make use of this vocal effect include the Chinese musical instrument Suona horn, Bawu, etc, and the western instruments include the trombone, cornet, pipe and other brass wind instruments. The vibration of the air column produces sound because of the direct effect of the lips. During the playing of the instrument, when the gas is blown into the instrument, the lips will be blown open. Under the action of the air flow and the elasticity of the lips, the lips will be closed again. This causes the mouthpiece of the instrument to vibrate constantly, forming sound waves that produce music. (Zhang& L. Y, 2015)

5. The Theory Used in Research

5.1 Musicology

Musicology is the general term for all theoretical subjects that study music. The general task of musicology is to elucidate the nature and laws of various phenomena related to music. For example, studies on the relationship between music and ideology include music aesthetics, music history, music ethnology, music psychology, music pedagogy, etc. The study of the material and material characteristics of music includes musical acoustics, jurisprudence, instrumental science, etc. The study of music form and its composition includes melodic theory, harmony acoustics, counterpoint, composition theory, etc. There are also from the performance aspect to consider, such as performance theory, command method and so on. (Beard & D. J. & Gloag & K, 2005)

In this study, the researchers applied the method of Musicology to analyze the playing techniques and musical works of *Yuping Xiaodi*, the analysis was divided into three groups: basic, intermediate and advanced. The musicological analysis in this thesis, firstly, focuses on the investigation of human spirit and social environment, and explains the musical phenomenon from the perspective of human society, history and cultural life outside music. Secondly, the social nature of music is explained through the music itself, especially through the form elements of music.

5.2 Ethnomusicology

J Kunst replaced the term "comparative musicology" with the term "Ethnomusicology", since the method of comparison was applicable to all kinds of sciences. Ethnomusicology is the study of all kinds of music; It is not limited to the study of music itself, but also includes the study of the relationship between music and its cultural background. Usually the term has one of two meanings: 1) the study of music outside of all European art music and of the early traditional musical heritage in Europe and elsewhere; 2) the study of a wide variety of music that exists in a given place or region. (Mantell Hood, 1986)

Using Ethnomusicology research methods to do field work and interview key informants. It is divided into two stages: collecting, sorting out data and analyzing research data. The first phase of the work content in addition to the field recording, camera, including investigation, collection and records related to the music of all kinds of cultural phenomena, including the investigation and study music and social cultural background, and other art, explore the

consciousness of singing, the music of the players as well as the meaning of the music they use language and so on. The second stage is to organize the work. It includes analyzing the collected acoustics data from all aspects of musical expression, such as sound system, music structure, singing and playing method.

5.3 Historical Musicology

The historical Musicology is a branch of musicology. It is a discipline to study the specific process and regularity of the development of music history using various methods of interpreting history in chronological order. Originally Western music was the main research axis, and now it includes music history research from all over the world. It studies the issues related to the writings of music history and the science of the past changes of music that appear in music treatises, such as the evolution, development and laws of music content and form. It belongs to a branch of the entire field of human cultural history research, and is a discipline juxtaposed with historical studies such as literature, fine arts, and dance. (Crist& S. A.& Marvin, 2004)

In this study, the method of historical musicology is used to study the specific process and development law of chronological interpretation of history. From the perspective of historical musicology, the researcher discusses the musical culture change of *Yuping Xiaodi* in the course of historical development, and further expounds the factors that produce these changes.

5.4 Organology

Organology is derived from the Greek language and is a subject that focuses on musical instruments (tools for playing music). It is currently an important subject in the field of musicology at home and abroad. Early scholars' research on musical instruments was mainly a supplement to the field of ethnomusicology. After the 19th century, under the influence of the trend of extensive collections of musical instruments in European and American museums, musical Organology gradually became an independent discipline. The earliest research content of musical Organology is the classification of musical instruments. At present, the research of musical Organology mainly focuses on the relationship between musical instruments and musical performance, musical instrument classification, musical instrument materials, musical instrument design, musical instrument production, musical instrument vibration mode, musical instrument symbolism, etc. In addition, musical Organology and music acoustics, music pedagogy, music archeology, music iconography and other disciplines all overlap.

Organology studies the origin, development, evolution, spread and derivation of Musical Instruments, as well as their structures, characteristics, manufacturing techniques and materials. It covers a wide range of disciplines such as archaeology, history, cultural anthropology, musicology, taxonomy, acoustics, mechanics (physics, solids, fluids, structures), electronics, technology, and materials science. There are many kinds of Musical Instruments in the world, which not only have long origin and historical background, but also have their special and complicated development rules. So far, the structure and acoustic mechanism of Musical Instruments have not been fully explored from scientific principles. Whether from the point of view of social science or natural science, the science of Musical Instruments is quite complex and profound from object to content, and there are still many problems that need to be solved satisfactorily from scientific theory. (Hood& M. & Zhou& J. M, 2016)

Organology research methods in this dissertation was used to study the origin, development, evolution, transmission and derivation of Musical Instruments, as well as their structures, characteristics, manufacturing techniques and materials of *Yuping Xiaodi*.

6. Documents and Related Research

Up to now, the researcher has collected a few papers and monographs on *Yuping Xiaodi*. In each monograph also has the sporadic opinion and some discussion. Among them, there are 6 articles related to foreign languages. It is worth mentioning that up to now, there has not been a academic dissertation (Graduation dissertation) on the study of *Yuping Xiaodi* in China. Different from the previous studies, this dissertation will make a detailed study on the making process and playing techniques, and discuss its musical cultural changes. In general, the studies collected by the researcher mainly include the following aspects:

Judging from the publication time of the papers, the interval is from 1957 to 2021. Judging from the themes of the papers, most of them focus on the historical origins, production technology, cultural transmission, protection and development. With the revival of *Yuping Xiaodi* in the 1980s, especially after it won the gold medal in the Panama International Exposition held in San Francisco in 1915, due to its unique shape, exquisite production, beautiful tone and other characteristics, the academic community has a great interest in its research.

Xinhua news agency. (1957). Yuping Xiaodi Expands Production the Xinhua news agency published a news release titled "*Yuping Xiaodi Expands Production*", this is the earliest information on the subject that can be found on online search. According to the news release, *Yuping Xiaodi* is a famous special handicraft in China, and 35,000 pairs will be produced that year, of which 13,000 will be for export.

Zheng Yan & Jin Yaowei. (1978). "*Yuping Xiaodi*", the article was published in the second issue of *People's Pictorial*, which is the earliest academic achievement that researchers know about *Yuping Xiaodi*.

Liu & Y. A (1991) "*Discussion on the Origin of Yuping Xiaodi*", was published on *Musical Instruments*. This is the first paper to study the origin of the *Yuping Xiaodi*. In this paper, the researcher summarized different viewpoints on its origin and elaborated his views in detail by means of argumentation.

Wang & X (2012a) "*Yuping Xiaodi*", This is a monograph was published on *China Drama Publishing House*, which is a very authoritative document.

Wang Xing. (2013). "*Research on the Origin of Yuping Xiaodi*", was published on *Musical Instruments*, which initiated the research on *Yuping Xiaodi*.

6.1 The research on the historical origin of Yuping Xiaodi are as follows:

Lau & F. C (1991) "*A Journey to Fanjing Mountain*". The book was published in Guizhou People's Publishing House, which included the article "Taoist to Yuping county to Leave the Ancient Tune ". It is recorded in the book that about 150 years ago, Zheng Ruxiu, the ancestor of Yuping Xiaodi, met a Taoist in Yuping County. The taoist taught Zheng how to cut down bamboo and open the sound hole, and then they made the first Xiao. According to textual research, Zheng Ruxiu is a real person. He was born in the 1830s of the Qing Dynasty. In the fourth year (1854) of Emperor Xianfeng of the Qing Dynasty, he was arrested and sent to be a soldier. After 18 years, he returned and set up a Xiaodi manufactory. According to this view, the history of Yuping Xiaodi originated 150 years ago.

Historical Relics of Yuping County. (1982). "*Historical Relics of Yuping County*". The Yuping County Government organized the compilation and publication this book. In the chapter of Yuping Xiaodi, it is recorded that during the reign of Yongle period of the Ming Dynasty (1403-1424), a Taoist passed by Yuping and gave the production technology of Xiaodi to Zheng

Ruxiu, a local poor man. Since then, the Zheng family to make Xiaodi for the industry, handed down to today. The Yongle Period of the Ming Dynasty here is an important historical source, which is still used today. Therefore, the fourth view is that the historical origin of Yuping Xiaodi should be in the Yongle reign of the Ming Dynasty, and this view has been written down in the local Chronicles by the local government, which is now a view that can be accepted by most people.

Liu Bingrong. (1981). "*Yuping Xiaodi playing new music*". This article was published in Beijing Evening News. In the article, there are many poems praising *Yuping Xiaodi* from ancient times to the present. One of the most famous poems is written by Li Bai, a poet of Tang Dynasty. The "Yu-Di" mentioned in this poem refers to "Yuping-Di". This article also quoted the legend that Zheng ruxiu and Taoist created Yuping-Xiao, but this legend was put before the Tang Dynasty. This view is based on the records of Tang poetry in ancient China. It holds that the origin of *Yuping Xiaodi* should be before Tang Dynasty.

Xiaodi product manual. (1951). "*Xiaodi product manual*". This manual was printed by *Yuping Xiaodi* joint venture manufacturing factory. It is written in the manual that the name of *Yuping Xiaodi* began in Wanli year, but it is not said that it was made in Wanli year. In 1985, the book "general situation of Yuping Dong Autonomous County " recorded that the Wanli year of Ming Dynasty was the beginning time of making *Yuping Xiaodi*. According to this point of view, the name and creation of *Yuping Xiaodi* was in the Wanli period of Ming Dynasty.

6.2 The research on the making craftsmanship of *Yuping Xiaodi* are as follows:

Anonymity (2019) "*Appreciation of Intangible Cultural Heritage: The Making Technique of Jade Screen Xiao Flute*". *Yuping Xiaodi* is often given as a gift or collected by people. It is called the "Three Treasures of Guizhou" together with Guizhou Maotai and Dafang Lacquerware. The production process of *Yuping Xiaodi* includes materials, embryo making, engraving, polishing and so on. The finished product is beautiful in style with male and female pairs. *Yuping Xiaodi* was once listed as a tribute to the emperor in the Ming Dynasty.

Deng& H. S (2020) "*Bamboo Carving Art on Yuping Xiaodi*". The carving art content on the *Yuping Xiaodi* mainly includes writing, poetry, painting and other auspicious patterns. The earliest bamboo carving is the writing knowledge, and its knife technique is shallow carving, mainly focusing on the beauty of the strength of lines. With the improvement of carving tools and

the efforts of artists, the artistic space of bamboo carving of *Yuping Xiaodi* is expanding. *Yuping Xiaodi* will become more and more famous at home and abroad because of the common improvement of its internal sound and external bamboo carving art.

Lau & F. C (1991) "*Music and musicians of the traditional Chinese 'dizi' in the People's Republic of China*". Dizi manufactured in the PRC today are timed to the equal-tempered scale, the construction of the body has also experienced a certain degree of modification. Instead of having a single piece of bamboo as the main body, the modern dizi is usually made of two separate pieces of bamboo. The method of joining the two pieces is quite similar to the idea used on most western woodwind instruments. A brass tube is inserted partially into the end of the upper portion to form a tenon. At the top of the other pipe, a brass tube slightly larger than the tenon, is completely inserted into the opening of the other tube which fines the inner wall, thereby forming a socket. By inserting the tenon into the socket, the two pieces of bamboo are thus held in place to form a complete piece.

Wang & X (2012b) "*Yuping Xiaodi*". The making craftsmanship of *Yuping Xiaodi* is complicated, meticulous and exquisite. Generally speaking, the production process of *Yuping Xiaodi* is roughly divided into three processes: embryo making, carving and finished product. From embryo making to finished product, Xiao has 24 processes, ordinary Di has 22 processes, adjustable Di has 38 processes, and each process is indispensable. The carving technology of *Yuping Xiaodi* appeared in the late Qing Dynasty. Although it has only a history of more than 100 years, it has developed rapidly and its unique carving technology has reached a wonderful state. The final product of is also quite complex, which needs to be colored as a whole and pays great attention to the contrast of colors.

Wang & Z. C (2017) "*An investigation report on the production status of Yuping Xiaodi*". At present, the production and development of *Yuping Xiaodi* has encountered a bottleneck period. There are only less than ten manufactories in Yuping county that can be engaged in the production of *Yuping Xiaodi*, and they are generally faced with the embarrassing situation of less orders, lack of high-quality raw materials and lack of market competitiveness. Take *Yuping Xiaodi* manufactories as an example. The average monthly order is about 80,000 RMB, but only eight workers actually work, while 30 workers have to pay social insurance. The enterprise has a heavy burden. At present, the production industry in Tongling county, Hangzhou City, Zhejiang

Province, China is the most advanced. Its large-scale mechanized production has a huge impact on the traditional handmade *Yuping Xiaodi*. The traditional advantages of *Yuping Xiaodi* in pitch accuracy and timbre no longer exist and the method of solely relying on hearing to judge the pitch is not feasible.

6.3 The research on the playing techniques of *Yuping Xiaodi* are as follows:

Wang& J. Y (2014) "*The Development of Chinese Bamboo Flute Playing Skills (Main)*". The playing technique of Di can be divided into three parts: breath, finger (fingering) and tongue; From the music literacy is divided into rhythm training and intonation, timbre, volume training. The training of playing skills is very important in the study. These seemingly simple basic training contains a lot of knowledge and skills.

Zhang& W. L (1995) "*The playing method of Xiao musical instrument*". The types of Xiao are Dong xiao, Qin xiao, Yu ping xiao and Nan dongxiao. The commonly used Xiao are six holes and eight holes. Its playing technique are similar to Di, both emphasizing the use of breath and fingering.

Zhang& W. L (2011) "*Research on Di art*". The playing technology of Di generally refers to the methods and skills of playing summarized in the long-term accumulation of Di music performance and playing principles. There are various classifications of Di playing techniques. We usually divide the playing techniques into different styles and genres. The technology of the north genre: *Tuyin, Huayin, Duoyin, huatongyin*; the technology of the South genre: *Chanyin, Dieyin, Zengyin, daiyin*, etc. Of course, there are some new techniques, such as circulation ventilation. The systematic analysis and exploration of Di playing technology can standardize the common playing technology and the application of different skills in different music styles.

6.4 The research on the transmission of *Yuping Xiaodi* are as follows:

Huang& X (2016) "*A brief analysis on the protection and transmission of Xiaodi culture in Yuping County*". Protection and transmission of *Yuping Xiaodi*. The principle of being people-oriented; Principle of holistic protection; Live protection principle; The principle of civil affairs run by the people; Uniqueness protection principle; In situ protection principle. transmission mode: Family transmission; transmission of Training Garden; Traditional festival transmission; Cultural activities transmission.

Wu & H. C (2009) "*Enhancing the Xiao Di Cultural Industry of the Northern Dong nationality and boosting the development of the Yuping cultural tourism industry*". The problems existing in the development of *Yuping Xiaodi* are: First, the lack of innovation consciousness. After hundreds of years of development, the production scale, quality and grade of the products have been greatly improved, but the product development is weakened, adhering to the existing production pattern, coupled with the increasingly fierce market competition, so that the *Yuping Xiaodi* manufactory is in a difficult situation. Second, insufficient capital investment. The development of new products needs a certain amount of capital investment to organize the implementation. However, under the existing external market environment, it is very difficult to obtain limited capital investment. Third, there is a serious shortage of talents. Fourth, the consciousness of market competition is not enough. Due to the small number of in-service staff, only 6-8 people, the *Yuping Xiaodi* Factory is basically waiting at the door, and the external publicity and promotion of goods are relatively few. In addition, the products produced by decades of consistent system, the market potential is not enough to tap, resulting in a gradual decline in the market share. Fifth, there is no fixed raw material base. After investigation, most of the raw materials used in the production of *Yuping Xiaodi* are purchased from other places, resulting in unstable materials, increased transportation costs and many other difficulties.

Xie Hui & Yang Huilan. (2017). "*Transmission of Intangible Cultural Heritage -- study on transmission and Protection of Yuping Xiaodi*" was published, this paper mainly focuses on the problems faced by the transmission and protection of the *Yuping Xiaodi*. It takes the solution of market problems as the breakthrough point, the preservation of traditional skills as the only means, the promotion of the culture of as the purpose, and the revitalization of surrounding industries as the welfare to form a "five-in-one" transmission and prosperity mechanism of the *Yuping Xiaodi*. "Five" refers to political, economic, social, cultural and industrial levels. "One body" refers to the carrier of the construction and promotion of the cultural transmission of the *Yuping Xiaodi*.

Yao & H (2013) "*Inheritance and development of Guizhou folk wind instruments*". As a major province of intangible cultural heritage, Guizhou has made active exploration on the protection and transmission of folk wind instruments. Such as the first batch of state-level non-material cultural heritage *Yuping Xiaodi* making skill recorded in the name of the protection and

transmission, in mechanized production lead to the cultural connotation of flow loss, people between art, old age, design, production, sales channels, lack of market competitiveness, and when to the masses participation is increasingly lack of trouble, the local government in the protection and inheritance concept innovation, system design and practice in and so on has carried on the bold exploration.

Yu& F (2015) "*The Inheritance Problem of Yuping Xiaodi*". *Yuping Xiaodi* has made some achievements in promotion and transmission, but the overall feeling is that the input-output ratio is not ideal, the brand development strategy is still extensive, the brand promotion means are not new enough, and the research on market segmentation demand is not enough. Therefore, the Party committee and government of Yuping County put forward the goal of "expanding the *Yuping Xiaodi* cultural industry and boosting the development of the cultural tourism industry of Yuping" according to the reality.

In the literature review of this chapter, the researcher selected 22 articles on this subject and summarized them into four parts. Research on the theme of *Yuping Xiaodi*, there are seven documents on the historical research, seven on the process of making technology, three on the playing techniques, and five on the music cultural diffusion. Among them, the researcher analyzes an abroad article, this article discusses the production process of Di, which provides a train of thought and reference for domestic research.

Chapter III

Research Methodology

In this research is qualitative research, the researcher chose Yuping County of Guizhou Province as the research area of the theme of *Yuping Xiaodi*. Since this area is the birthplace of *Yuping Xiaodi*, the researcher chose key informants as my research clues. The process I used is as follows.

1. Research Scope

1.1 Scope of content

- 1) To study the process of making musical instrument of Yuping Xiaodi in Yuping county, Guizhou province, China.
- 2) To analyze the playing techniques of Yuping Xiaodi in Yuping county, Guizhou province, China.
- 3) To study music cultural change of Yuping Xiaodi in Yuping county, Guizhou province, China.

1.2 Scope of research site

Yuping County, Guizhou Province, China



Figure 2 Map of Yuping county, Guizhou Province, China.

Retrieved: Photo: [www. Baidu.com](http://www.baidu.com) (Accessed May 3, 2021)



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1.3 Scope of time

December 2020 to December 2021

1.4 Methodology

1) Qualitative research is the approach used by researchers to define or deal with problems. The specific purpose is to study the specific characteristics or behavior of the object in depth, and further explore the causes of its generation. It is one of the basic steps and methods of scientific research to determine the essential attribute of things. It is through observation, experiment and analysis, etc., to investigate whether the research object has this or that attribute or feature, and whether there is a relationship between them. It only requires answers about the nature of the subject. Researchers use historical review, literature analysis, interview, observation, participation experience and other methods to obtain data in the natural context, and use non-quantitative means to analyze them and obtain research conclusions. Qualitative research puts more emphasis on meaning, experience (usually verbal description), description, etc.

2) Interviews: Interview is research conversation. It is a way to collect objective and unbiased factual materials in oral form according to the replies of the interviewees, so as to accurately explain the whole to be represented by samples. Especially when you're dealing with more complex problems you need to learn about different types of material from different types of people. The interview method collects information and data through face-to-face communication between researchers and respondents, which has better flexibility and adaptability. Interviews are widely used in education investigation, job hunting, consultation, etc., including fact investigation and opinion consultation, and more often used in personality and individual research. Interviews can be formal or informal; One by one interview, that is, individual interview, can also hold a small forum, group interview. In the interview process, although the roles of the speaker and the listener are often exchanged, in the final analysis, the interviewer is the listener and the interviewee is the speaker. Interviews are mostly person-to-person, but can also be conducted in groups.

3) Observation method refers to a method in which researchers directly observe the objects under study with their own senses and auxiliary tools according to certain research purposes, research outline or observation table, so as to obtain data. Scientific observation is purposeful and planned, systematic and repeatable. The researcher participates in the activities

related to the research objects. On the one hand, the researcher obtains information through verbal communication and on the other hand, he obtains information through observation.

4) Document analysis: it is a form of qualitative research. The researcher will collect data and search literature from the library and network database, and analyze the literature related to the research topic.

2. Research process

2.1 Research site and key informant

Research site: Yuping County, Guizhou Province, China.

The reason:

In China, it is well known that Yuping County is called "the hometown of Chinese Xiaodi". The research object musical instrument *Yuping Xiaodi* also got its name from Yuping county, Guizhou province, China. In other words, Yuping County is the birthplace of *Yuping Xiaodi*. It started in 1573 and has a long history more than 400 years, the story of *Yuping Xiaodi* has been gloriously recorded. *Yuping Xiaodi* and the trademark of "YPXD" have been officially approved by the Trademark Office of the State Administration for Industry and Commerce as the first musical instrument geographical indication certification trademark in China. As a strong brand, *Yuping Xiaodi* won a lot of top honors. It was selected into the first batch of national intangible cultural heritage lists, and is called the "Three Treasures of Guizhou" together with Moutai and generous lacquerware. *Yuping Xiaodi* has already entered the international stage.

In recent years, in order to transmit and protect the Xiaodi culture and promote the development of cultural industry, Yuping County has built *Yuping Xiaodi* museums. On November 15, 2012, Guizhou Provincial Bureau of Cultural Relics approved the establishment and registration of *Yuping Xiaodi* Museum. As a state-owned museum, it is the only museum dedicated to the culture of Xiaodi in China. The establishment of *Yuping Xiaodi* Museum is of great significance to further build and enhance the cultural brand of Yuping county.

Key informants: Mr. Wu Jihong & Mr. Liu Zesong

The criteria for selecting key informants are:

- 1) He was born and grew up in Yuping County, and is a native.
- 2) He knows the culture and development of *Yuping Xiaodi*.

3) He knows how to make *Yuping Xiaodi* and is an excellent producer, and has won the highest award in various production competitions.

4) He has been engaged in the production of *Yuping Xiaodi* for more than 30 years and has rich experience.

5) He is the inheritor (transmitter).

Based on the above selection criteria, the key informant I selected are Mr.Wu Jihong and Mr.Liu Zesong. My criteria for choosing them as key informants is that, Mr.Wu Jihong, he was both the *Yuping Xiaodi* manufactory director in Yuping county and an excellent *Yuping Xiaodi* maker. He has been a craftsman for over 30 years. He is the provincial non - hereditary transmitter of *Yuping Xiaodi* making skills. Mr.Wu Jihong has been engaged in the production of *Yuping Xiaodi* since 1994. Since 2006, he has won awards in a series of Xiaodi making competitions for many years in succession, making positive contributions to the transmission and development of the *Yuping Xiaodi* culture. Wu Jihong is not only skilled in Xiaodi production, but also very concerned about the development of *Yuping Xiaodi* career. In March 2014, Wu Jihong was elected as the director of the *Yuping Xiaodi* manufactory in Yuping county. In 2020, he won the honorary title of "*Yuping Xiaodi Manufacture Master*" in the Competition of Xiaodi Craftsman.



Figure 3 Mr. Wu Jihong

Retrieved: Photo: Li Xingchen

Mr.Liu Zesong, he is 74 years old, has been making *Yuping Xiaodi* for more than 50 years. He is the national non-hereditary transmitter of *Yuping Xiaodi* making skills. As his father Mr.Liu Wenzhong is a technical worker of *Yuping Xiaodi* Factory, he has been attached to the production since he was young. Although many people have already started to use machines to produce Xiaodi, Liu Zesong still sticks to the tradition of hand-making. He feels that machines

can only improve the speed of production, but they can never replace the proper control of hands. Liu Zesong now has 26 apprentices, many of whom are young and excellent *Yuping Xiaodi* makers. Liu Zesong also goes to the school every week to teach students about the history and production of *Yuping Xiaodi*, it has made outstanding contributions to the transmission and development of *Yuping Xiaodi*.



Figure 4 Mr. Liu Zesong

Retrieved: Photo: Li Xingchen

2.2 Research equipment

- 1) Voice recorder: Record information about the interview.
- 2) Camera: Record information about the observation.
- 3) VCR: Record information about interview and observation.
- 4) Laptop: Store photos and videos, record text and information.

2.3 Research Tools

The research tools used in this dissertation are mainly interview and observation. In order to obtain the research data, the researcher designed the questionnaire and designed the corresponding interview form and observation form according to different research objects.

2.4 Working Process

Process of making the questionnaire (based on research objective).

- 1) Bring it to the advisor to examine.
- 2) Be modified according to advisor editing.
- 3) Send it to an expert for inspection before using
- 4) Modified according to specialist advice before being used in the field work.

2.5 Data collecting

The researcher will collect data through documents analysis and fieldwork. In order to make an in-depth study, researchers refer to literature materials in libraries and cultural centers and use network platforms such as CNKI (China National Knowledge Infrastructure) and other network platforms to complete the documents analysis.

Then the researcher plans to go to the research site (Yuping county, Guizhou province, China) for fieldwork. The researchers will visit the manufactory and record the production process of *Yuping Xiaodi* through interviews, observations, audio and video recordings.

2.6 Data analysis

The researcher analyses data follow up the objectives and the definition of term by using concepts and theories.

In the first objective, the researcher will analyze the making technique by using quantitative research methods and fieldwork data. The researcher will go to *Yuping xiaodi* Manufactory for field investigation and sampling by using the method of observation, and interview my key informants, Mr. Wu Jihong and Mr.Liu Zesong, to obtain experience and relevant data from them.

In the second objective, the researcher will analyze the playing methods and techniques by using document analysis and Practice method.

In the third objective, the researcher will collect and organize the data by using document analysis method. The core of data analysis is mainly focused on music cultural change and development and descriptive analysis method will be used in this part.

2.7 Presentation

In this dissertation, the researcher will present on 7 chapters:

- 1) Chapter 1: Introduction
- 2) Chapter 2: Review Literature
- 3) Chapter 3: Methods of Research
- 4) Chapter 4: The Process of Making Yuping Xiaodi
- 5) Chapter 5: The Playing Techniques of Yuping Xiaodi
- 6) Chapter 6: The Music Cultural Diffusion of Yuping Xiaodi
- 7) Chapter 7: Conclusion, Discussion and Suggestions

Chapter IV

The Making Process of Yuping Xiaodi Musical Instrument

The research objective of this chapter is the making process of the Chinese national intangible cultural heritage *Yuping Xiaodi* musical instrument located in Yuping County, Guizhou Province, China. This chapter is divided into two parts. The first part studies the making process of *Yuping Xiaodi* musical instruments, and the second part is the unified production criterion of *Yuping Xiaodi* musical instruments. The making craftsmanship of *Yuping Xiaodi* has a long history of more than 400 years and is a typical representative of traditional manual Xiao & Di musical instrument production. The study employed the qualitative research methodology of ethnomusicology. The data were mainly collected with observation, interview, audio and video recording from fieldwork with the key informants and presented in the descriptive analysis format. The results were as follows: The making process of *Yuping Xiaodi* is based on a special kind of water bamboo and purple bamboo grown in Yuping County as the main raw material. It has undergone four processes: 1) Select material, 2) Model making, 3) Carving, 4) Finished product. There are many detail steps in the four processes. The making processes are complex and are all used handmade. there are about 26 steps for making *Yuping Xiaodi*. From the above information, the researcher is therefore interested in studying the making process in order to conserve musical instruments and provides insights for those interested in furthering their studies in this musical instruments.

The researcher chose Yuping County of Guizhou Province as the research area of the theme of *Yuping Xiaodi*. Since this area is the birthplace of *Yuping Xiaodi*, the researcher chose key informants as research clues. Mr. Liu Zesong and Mr. Wu Jihong. The criteria for selecting key informants are: 1) He was born and grew up in Yuping County, and is a native. 2) He knows the culture and development of *Yuping Xiaodi*. 3) He knows how to make *Yuping Xiaodi* and is an excellent maker, and has won the highest award in various making competitions. 4) He has been engaged in the making craftsmanship of *Yuping Xiaodi* for more than 30 years and has rich experience. 5) He is the inheritor.



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Mr. Liu Zesong, he is 74 years old, has been making *Yuping Xiaodi* for more than 50 years. He is the national non-hereditary transmitter of *Yuping Xiaodi* making craftsmanship. As his father Mr. Liu Wenzhong is a technical worker of *Yuping Xiaodi* Factory, he has been attached to the production since he was young. Although many people have already started to use machines to produce Xiao & Di, Liu Zesong still sticks to the tradition method of hand-making. He feels that machines can only improve the speed of production, but they can never replace the proper control of hands. Liu Zesong now has 26 apprentices, many of whom are young and excellent *Yuping Xiaodi* makers. Liu Zesong also goes to the school every week to teach students about the history and making process of *Yuping Xiaodi*, it has made outstanding contributions to the transmission and development of *Yuping Xiaodi*.

Mr. Wu Jihong, he was both the *Yuping Xiaodi* manufactory director in Yuping county and an excellent *Yuping Xiaodi* maker. He has been a craftsman for over 30 years. He is the provincial non - hereditary transmitter of *Yuping Xiaodi* making skills. Mr. Wu Jihong has been engaged in the production of *Yuping Xiaodi* since 1994. Since 2006, he has won awards in a series of Xiao & Di making competitions for many years in succession, making positive contributions to the transmission and development of the *Yuping Xiaodi* culture. Wu Jihong is not only skilled in Xiao & Di production, but also very concerned about the development of *Yuping Xiaodi* career. In March 2014, Wu Jihong was elected as the director of the *Yuping Xiaodi* manufactory in Yuping county. In 2020, he won the honorary title of "*Yuping Xiaodi* Manufacture Master" in the Competition of Xiao & Di Craftsman.

In August 2021, the researcher completed the fieldwork, visited the key informant Mr. Liu Zesong, and recorded the entire process of making the *Yuping Xiaodi* musical instrument.



Figure 5 Key informant, Mr. Liu Zesong

Photo: Li Xingchen



Figure 6 Key informant, Mr. Wu Jihong

Photo: Li Xingchen

According to the description of the Key informant Mr Liu Zesong, the making process can be roughly divided into four processes: 1) Materials selecting, 2) Model making, 3) Carving, 4) Finished products.

There are many detail steps in the four processes. According to preliminary statistics, there are about 26 steps in total (Table 1). The making process is complicated, and are mainly made by hand.

Table 1 The whole making process and tools of *Yuping Xiaodi*

Processes	Detailed steps	Tools
Materials selecting	1. Species of bamboo	None
	2. Cut bamboo	Sickle
	3. Blanking bamboo	Bamboo sawing machine.
	4. Roast and straighten bamboo	Stove and straightening tools
	5. Storage bamboo	Warehouse
Model making	1. Select material	Inner diameter ruler
	2. Blanking bamboo again	Bamboo sawing machine.
	3. Roast and straighten bamboo again	Stove and straightening tools

Table 1 (Continued)

Processes	Detailed steps	Tools
	4. Get through the inner sections of the bamboo	Taper file
	5. Clean up the inner wall of the bamboo	Round iron bar and brush
	6. Grind off the outside sections of the bamboo	Grinding machine
	7. Scrape off the bamboo skin	Scrape knife
	8. Roast and straighten bamboo for the third time	Stove and straightening tools
	9. Water washing	Brush
	10. Locate sound holes	Straight line box and tuning boxes
	11. Drilling holes	Drilling machine
	12. Install cork	Cork
	13. Adjust the pitch	Hole knife and tonometer
	14. Polishing	Sandpaper
Carving	1. Carving technique	Single-knife and double-knife
Finished product	1. Coloring	Coating and brush
	2. Varnishing	Lacquer and brush
	3. Inlaying	Ornament
	4. Binding wire	Binding wire machine
	5. Checking	Hole knife and tonometer
	6. Packaging	Packing box

Make: Li Xingchen



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Materials selecting

1. Species of bamboo

There are nearly 200 kinds of bamboo produced in China, but few can be used to make Xiao & Di musical instruments, especially the bamboo that can be used to make high-quality musical instruments. Therefore, the collection, selection and preservation of bamboo plays an important role in improving the acoustic quality of musical instruments. In order to select materials before making Xiao & Di musical instruments, we must first understand the types and distribution of bamboo materials. Among 200 kinds of bamboo, there are limited raw materials such as bitter bamboo and purple bamboo that can be used to make flute instruments. Most of bamboo are distributed in the southern provinces of China, among which Zhejiang, Jiangxi, Anhui and Fujian are in the majority. These bamboo in the growing area generally have two things in common:

1) Climate. These places have foggy spring, abundant precipitation in summer, dry autumn and cold winter. The tempering of four seasons climate change makes bamboo hard in texture, good elasticity of fiber tissue and strong ability to adapt to climate change.

2) Geology. Most of bamboo grow on shady hillsides with good drainage and fertile soil, so the bamboo is of good quality.

According to the description of the key informants Mr. Liu Zesong and Mr. Wu Jihong, the materials used to make the *Yuping Xiaodi* musical instrument are very strict, and a unique water bamboo that grows on the shadow of the mountain and next to the stream is the main material. Since the bamboo poles rarely see sunlight, the bamboo body is long and round, the bamboo joints are smooth, and the diameter is not large. Bamboo with a diameter of 12-17mm is an ideal material for making musical instrument. In recent years, materials such as bitter bamboo, white bamboo, golden bamboo, and mountain bamboo have also been used in the making craftsmanship of *Yuping Xiaodi*. Most of these bamboos come from Feifeng Mountain and Taiyang Mountain in Yuping County, as well as Liulong Mountain which is 90 kilometers away from Yuping County. Bamboo materials can be divided into two categories as a whole, that is, the materials used to make Yuping Di and the materials used to make Yuping Xiao. The most commonly used bamboo materials for making Yuping Di are water bamboo, bitter bamboo,

purple bamboo, and golden bamboo. The most commonly used bamboo materials for making Yuping Xiao are water bamboo and purple bamboo.

In recent years, in order to protect and transmit *Yuping Xiaodi* culture and promote the development of Xiao & Di cultural industry, Yuping County has vigorously promoted the cultivation of raw materials and actively promoted the construction of bamboo base. In August 2021, the researcher went to Yanzipo Bamboo Forest Base in Wuyang Village, Pingxi Street, Yuping County and Anping Village Bamboo Forest Cultivation base in Pingxi Town for investigation. Through interview and investigation, the researcher learned that this bamboo forest base is a place specially producing raw materials for *Yuping Xiaodi*, mainly planting purple bamboo. Since 2010, a total of 1.3 square kilometers of bamboo have been planted, which is equivalent to 186.7 standard football fields. However, the amount of bamboo planted is far from enough to meet the demand for raw materials for making *Yuping Xiaodi* musical instruments, so 0.13 square kilometers of bamboo forest will be added in 2021. In early 2021, Yuping County introduced a batch of new high-end bitter bamboo varieties from Tongling Bridge in Hangzhou, Zhejiang province for trial planting. Mr. Zhou Linsheng, an authoritative Xiao & Di musical instrument maker, once said that almost all the materials used to make Xiao and Di in China come from Tong lingqiao Township, Yuhang District, Zhejiang Province. The bitter bamboo material in this place is the best in China because the bamboo branches are relatively long, And the thickness is very symmetrical, the structure is very hard, a bamboo, from the thick part to the thin part, can contain almost all the tunes of the instrument. While managing and protecting the existing bamboo forest base, Yuping County vigorously experimented with high-end bitter bamboo varieties, which provided raw material guarantee for Xiao & Di production and laid a solid foundation for the *Yuping Xiaodi* industry to become bigger and stronger. Figure 7 is the bamboo base in Yuping county.



Figure 7 Bamboo base in Yuping County

Photo: Li Xingchen

2. Cut bamboo

The time for cutting bamboo is very particular. Most of the harvesting section is selected in winter. It should be in each year after October, with November and December is the best. At this time, the bamboo has less water and sugar, and the made instrument is not easy to crack and mold. The bamboo for making *Yuping Xiaodi* is also very particular, not all bamboos can be made into it. Even the qualified bamboo can be used as the raw material of Xiao and Di only if its growth section is more than three years. This kind of bamboo has long sections and thick flesh, and the thickness from head to root is basically the same, the size of a thumb. The selected bamboo should be straight, with well-proportioned head and tail size (parts taken from the material), and less bamboo sections (above 30 cm). Mr. Dong Xuehua, a famous Chinese Xiao & Di maker, said: "The general criteria for choosing bamboo materials are two aspects. One is to identify the growth age of bamboo. Generally speaking, 5-6 years old bamboo is the most suitable for making Xiao & Di instrument. The other is to identify the shape, it mainly depends on the roundness of the bamboo. It is better to use a bamboo with a round body, uniform thickness and appropriate spacing between the bamboo sections. When a piece of one bamboo is used to make a musical instrument, there are also choices in its different positions, such as those with hard texture, suitable inner diameter and wall thickness. Generally speaking, from the root to the top of the bamboo, the third to the fifth section is the best. Therefore, the pronunciation is quite ideal after the finished product." When cutting bamboo, select the position where the bamboo sections are about 10 centimeters long after being unearthed.

3. Blanking bamboo

After the bamboo is cut down, it should be stored in the warehouse for half a month to one month, in order to dry the moisture inside the bamboo. After drying, the bamboo should be fine blanking for the first time. Blanking means the operation of removing material of a certain shape, quantity or quality from the whole or batch of material after determining the shape, quantity or quality of the material needed to make a product. A bamboo is very long, the blanking process is to decide which part of a bamboo will be made into what level of material, divided into advance, intermediate and basic. Blanking is to make comprehensive use of the harvested bamboo and get the material reasonably according to the requirements of advance, intermediate and basic

level and various kinds of Xiao & Di musical instrument specifications. Good materials made of high-grade, the second to do medium-grade, poor to do low-grade.

Because naturally growing bamboo has many disadvantages, such as excessive bending, scars and moths, it is necessary to select bamboo for making Xiao & Di musical instrument. The standard of taking the material is to choose several sections of bamboo cut off by the root, the skin color is green with yellow, and both ends are basically the same size. Bamboo is hard in texture, strong in toughness and heavy in weight. Bamboo fibers are fine and well-balanced. Bamboo sections are long and straight, and bamboo is round and smooth.

4. Roast and straighten bamboo

After the blanking process is completed, the bamboo should be roasted and straightened for the first time. The details of roasting and straightening will be described in detail in the second big step--the Model making process (which requires a second roasting and straightening).

5. Storage bamboo

Bamboo material that has been roasted and straightened for the first time should not be made into Xiao & Di musical instrument immediately, but should be stored for a section of time. A piece of bamboo must be kept in a shady room for at least three years before it can be used to make instruments. Only the stored bamboo material can prevent the musical instrument from cracking and deforming. Bamboo storage warehouse should meet the requirements of rain, sun protection and wind protection.

During storage, bamboo materials are manually selected and classified. During the selection process, the bamboo materials used to make the "Bass Di, Treble Di, Qu Di, Bang Di " and Xiao are stacked separately. At the same time, the quality of the better selected for the production of high-quality musical instruments. When storing, stack the bamboos crosswise and turn them once a year after the rainy season to prevent mildew. When the sample is made, the moisture content of the bamboo shall not exceed 16%. According to the description of the key informant Mr. Liu Zesong, the storage of bamboo materials needs to be placed in warehouses of different years, such as the bamboo warehouse in 2021, 2020, 2019. Suppose you want to make a Xiao or Di musical instrument in 2021. If so, you need to choose bamboo materials from the

warehouse in 2019, because bamboo materials must be stored in the warehouse for at least three years before they can be used to make musical instruments. Figure 8 is the warehouse of bamboo materials.



Figure 8 Warehouse of bamboo materials

Photo: Li Xingchen

Model making

Model making means that after a series of steps, the musical instrument has been basically formed and functional, but not yet embellished. The model making process is the second and most important step among the four major steps in the making craftsmanship of *Yuping Xiaodi*.

6. Select material

Material selection is the first step in model making process, which is very critical. Only by choosing the right bamboo and making full use of its advantages can it be possible to make a good musical instrument. After three years of storage, bamboo material will crack, deformation, moth, mold and other conditions, material selection is to eliminate the bad bamboo, select good bamboo. According to the description of the informant Mr. Liu Zesong, after the selection of materials, the bad bamboo that was eliminated accounted for about 20% of the total bamboo. The criteria for selecting bamboo materials are as follows: 1) whether the inner and outer diameter of bamboo are round. The key to this step is the "inside diameter". Inner diameter refers to the diameter of the circular bamboo material (Figure 9). The size of the inner diameter and the accuracy of the measurement are directly related to the accuracy of the range of the musical instrument, so this is very important. The measurement of the inner diameter should be accurate

to millimeter (MM), the tool for measuring the inner diameter is the inner diameter ruler (Figure 10). The inner diameter determines the Key of the musical instruments (figure 11 & figure 12), For example, if you take a piece of bamboo and measure its inner diameter to be 17.5mm, then the bamboo material is suitable for making a Di in C. 2) The weight of the bamboo, heavy is better than light. 3) whether the fiber density of bamboo is tight and fine, and how the thickness difference between the two ends of bamboo is.



Figure 9 Inner diameter of Xiao or Di and Inner diameter ruler

Table 2 Selection criteria for Yuping-Di and Yuping-Xiao

Key	C	D	E	F	G	A
Inner diameter	17-18mm	16-17mm	15-16mm	14-15mm	13-14mm	12-13mm
Key	G	F	E	D		C
Inner diameter	18-19mm	19-20mm	20-21mm	21-22mm		22-23mm

Make: Li Xingchen

7. Blanking bamboo again

According to the above criteria, the musical instrument maker should make a more accurate judgment and further process the selected material. When blanking the material, a standard Xiao or Di should be prepared as a ruler to determine the length of the new material to be made. The specific method is to lean the ruler against the bamboo material and draw the length

of the musical instrument body with a marker. After the length is drawn, the bamboo can be cut into model bamboo material by machine. The tool used for cutting bamboo is a bamboo sawing machine. After the bamboo is sawed, the section of the instrument should be polished to make both ends of the instrument smooth and beautiful. Figure 11 shows the musical instrument maker using a bamboo sawing machine to cut off the appropriate length of the bamboo material according to the specifications and sizes of each Key. Figure 12 shows the musical instrument maker using a head grinder to smooth the bamboo body.



Figure 10 Cut bamboo material

Photo: Li Xingchen



Figure 11 Smooth bamboo material

Photo: Li Xingchen

8. Roast and straighten bamboo again

After storage, the bamboo may still be bent, so the second baking and straightening are necessary. This is a very important process and two complementary steps. In actual operation,

often it is straightened while roasting the bamboo. It is the beginning and the basic process of the entire, which will directly affect the quality of the finished product. Roasting bamboo means to artificially heat and bake the natural bamboo in its curved part. Since bamboo grows naturally somewhat curved, musical instrument made of curved bamboo is not aesthetically pleasing, but also affects the pitch and timbre. So, we're going to roast and straighten it. Its main function is to remove the residual water from the bamboo body, and through the burning of the flame, the bamboo also becomes flexible and easy to straighten, in order to meet the requirements of musical instrument making, in preparation for the next process. The tool for roasting is a stove. After the fire is lit, hold the bamboo and roast it until "sweats" (water from the bamboo comes out). Roast one end of the bamboo first, and then straighten the other end after one end is straightened. Roast the curved place hot, pull straight immersed in cold water (to prevent the curvature of the recovery), after cooling out can be dried. The key informant Mr. Liu Zesong said that the best effect of roasting bamboo is to remove half of the moisture inside the adjusted bamboo. Bamboo is easy to deform if less water is removed, and it is easy to crack if more water is removed, so it should be just right. Some makers do not master this step well at the beginning. It takes years of practice and experience. The following three points should be noted when roasting and straightening. 1) When roasting, you can drill a small hole in the bamboo near the big head where the bamboo sections are. This not only helps the water out of the bamboo, but also prevents the bamboo from bursting due to heat. 2) It is best to use wood as fuel when roasting bamboo, because wood fires tend to dry through the inside of the bamboo. 3) The bamboo should be kept moving back and forth when roasted. When moving, it is required to be uniform and smooth, and the displacement and steering are carried out at the same time. While roasting bamboo, there is a corresponding step, which is straightening. Straightening refers to straightening the bent part of the baked bamboo through the straightening tool. After straightening, the bamboo should be straight and no longer curved. The straightening tool is a straightening plate (Figure 13). The straightening and roasting process (Figure 14) requires years of practical experience and physical memory, this is very difficult.



Figure 12 Straightening tools

Photo: Li Xingchen



Figure 13 Roasting and straightening

Photo: Li Xingchen

9. Get through the inner sections of the bamboo

As there are still some bamboo sections running through the inside of the bamboo material, it is necessary to use tools to get through. To get through the inner section of the bamboo, hold the bamboo material in one hand and hold the tools called taper file (also called mace) in the other hand. First, push through each section of the bamboo tube with force. After the puncture, use the taper file again to polish the inner wall of the bamboo tube. This step requires a lot of effort. If the effort is not up to it, it will not be finished. After getting through the inner sections of the bamboo, repeated operations should be performed to ensure that the interior is smooth. This completes the process of getting through the inner section. Figure 15 as follow is the tools.



Figure 14 Tools, taper file

Photo: Li Xingchen

10. Clean up the inner wall of the bamboo

After the previous process, there will still be some stubble and bamboo film on the inner wall of bamboo, so it is necessary to clean the inner wall of bamboo. There are two tools to clean the inner wall: one is a round iron bar with a flat head (figure 16), which is used to clean the bamboo fragments in the bamboo tube. Another tool is a brush (figure 17), which can brush off bamboo film and debris on the inside of the bamboo material. Finally, a thin layer of shellac or nitro varnish is applied to the inner wall. This can not only make the pores of the inner wall of the bamboo tube fill a point (can make the musical instrument pronunciation smooth and bright), but also can prevent the bamboo from cracking or moth. In addition, it can prevent the decay of the instrument caused by the acidic water (or vapor) blown in by people. Then the cleaning of the inner walls is done.



Figure 15 Tools, round iron bar

Photo: Li Xingchen



Figure 16 Tools, brush

Photo: Li Xingchen

11. Grind off the outside sections of the bamboo

As the surface of the finished musical instrument is flat and smooth, and the natural bamboo material is raised at the bamboo section, so the raised part of the bamboo section should be polished and leveled. When grinding, use a grinding tool, while rotating the body of musical instrument while grinding. Until it is flat and smooth. As follow, figure 18 is the grinding machine and figure 19 is the process of polishing.



Figure 17 grinding machine

Photo: Li Xingchen



Figure 18 Process of polishing

Photo: Li Xingchen

12. Scrape off the bamboo skin

Scraping bamboo skin is to completely remove the wax layer on the surface of the bamboo layer. The tool used is a planer (Figure 20). The preparation for this process is as follows: the maker sits on a stool, holds one end of the bamboo material against his own body (abdomen) and fixes the other end on a certain position opposite the body, holds the planer with both hands, and pulls and pushes the bamboo skin. There are two requirements for scraping the bamboo skin. 1) The knife should not be stopped during the operation. 2) The bamboo should be turned left when scraping the bamboo, and the skin should be scraped from left to right.

It should be noted that since the Xiao musical instrument is made of purple bamboo, which itself has a dark black or eel-colored appearance, the natural appearance itself is quite beautiful, so it is not necessary to scrape off the skin, but to protect the natural appearance. The scraping process only applies to bitter bamboo or white bamboo used to make Di musical instrument.



Figure 19 The scrape tool

Photo: Li Xingchen

13. Roast and straighten bamboo for the third time

After Scraping off the bamboo, the material should be roasted and straightened again. The whole process requires three times of roasting and straightening. The purpose of this roasting is to get rid of the residual water in the bamboo body, to make the fibers in the bamboo stronger, and to make the fibers in the bamboo vibrate better after being made into musical instruments through pressure and tension.

14. Water washing

Wash the bamboo material in water to remove the residue and dust. After cleaning, the surface of bamboo material has no dust, and the inner diameter has become clean.

15. Locate the sound holes

Determining the position of each sound hole is a very crucial part of making *Yuping Xiaodi*. There are three methods for this process.

1) One is to take an ideal Xiao or Di instrument that has been made as a model and reference. Based on the length data of the instrument, mark the position of each sound hole on the new instrument with a marker. This method is simple, Easy to learn.

2) The second method is to use molds, which is a traditional and simple method. The props used are called straight line box (Figure 21) and tuning boxes (Figure 22), which are passed down by the predecessors based on years of experience and practice. The straight-line box is used to determine the longitudinal position of each sound hole (from the bamboo head to the bamboo end) on the instrument, ensuring that each sound hole is in a vertical line. The operation method is: first paint the line on the straight-line box with white paint, one end of the line is fixed on the bamboo head, the other end is fixed on the bamboo tail, gently pull the white line, and then let go, just like the principle of drawing a bow to shoot. A vertical white line appears on the instrument, and this is the vertical position of all the sound holes. This step should pay attention to beauty. Because a piece of bamboo has four sides, it has to avoid some imperfections, such as scars and lines. The bad places should be avoided, and the line should be straight. After the vertical line is drawn, it is necessary to determine the specific position of each sound hole. The prop used is the tuning box. The lines with different spacing on the tuning box are the positions where the Xiao or Di instrument will be punched. The tuning box is a mold for setting the tone of the Xiao and Di. Different tuning boxes are used to make Xiao and Di with different tones. Therefore, the tuning box has many tones (C, D, E, F, G, A...). When making the instrument, you only need to put the flute model on the setting box and rotate it horizontally once. You will get a number of rings that intersect with the straight line, and their intersecting points are the locations of the holes to be punched (Figure 23).



Figure 20 Straight-line box

Photo: Li Xingchen



Figure 21 Tuning boxes

Photo: Li Xingchen



Figure 22 Locate the sound holes by using molds

Photo: Li Xingchen

3) The third method is to use the percentage calculation method to determine the position of each sound hole. This method is mainly applicable to the actual size of the inner diameter of the bamboo pipe is close to the stipulated standard of bamboo. If there is a slight difference, it must be added with the method of lifting and lowering the opening to correct. The position of each hole of Di and Xiao is shown below (figure 24, Di; figure 25, Xiao). For the sake of illustration, we assume that the length from the blow hole to the sound outlet hole is 100 (calculated from the distance between the center of the hole), then the length from the blow hole to each finger hole is shown in the following two tables (Table 2, Di; Table 3, Xiao).

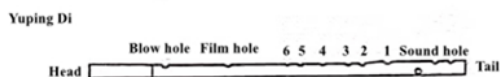


Figure 23 The position of each hole of Yuping-Di

Make: Li Xingchen

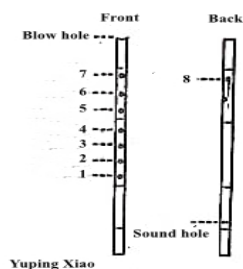


Figure 24 The position of each hole of Yuping-Xiao

Make: Li Xingchen

Table 3 The length of blow hole to each sound hole of Di

To the sound hole	To the first finger hole	To the second finger hole	To the third finger hole	To the fourth finger hole	To the fifth finger hole	To the sixth finger hole
100mm	84.47mm	74.86mm	69.60mm	59.00mm	51.00mm	44.70mm

Make: Li Xingchen

Table 4 The length of blow hole to each sound hole of Xiao

To the sound hole	To the first finger hole	To the second finger hole	To the third finger hole	To the fourth finger hole	To the fifth finger hole	To the sixth finger hole
100mm	84.2mm	74.4mm	69.5mm	59.4mm	51.2mm	44.60mm

Make: Li Xingchen

16. Drilling holes

The position of each hole has been determined according to the previous step. This step is to use a drilling machine to drill the hole. It should be noted that up to this step, the making process of Xiao model making is the same as Di, but drilling holes are different. The blow holes of the Xiao are arranged in a fan-shaped shape on the top of the bamboo section. The fan-shaped blow holes are characteristic of the Yuping-Xiao. The blow holes of the Xiao in other places are trapezoidal.

Figure 26 as follow is the fan-shaped blow holes of Yuping-Xiao.

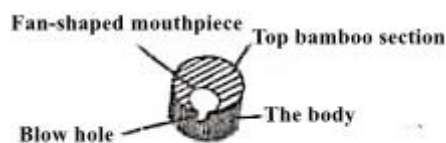


Figure 25 The fan-shaped blow holes of Yuping-Xiao

Make: Li Xingchen

It should be noted that for Di, its finger hole, blow hole, the size of the film hole is not the same, blow hole is the largest, relatively small is the finger hole, the smallest is the film hole. The size ratio of the holes is shown below of table 6.

Table 5 The fan-shaped blow holes of Yuping-Xiao

key	Blow hole	Finger hole	Film hole
C	11mm	10mm	9mm
D	10.5mm	9.5mm	8.5mm
E	10.2mm	9.2mm	8.2mm
F	10mm	9mm	8mm
G	9.8mm	8.8mm	7.8mm

Make: Li Xingchen

17. Install cork

When the hole is drilled, a cork (figure 27) needs to be attached to one end of the blow hole. The specific method is: the cork is pushed into the bamboo tube by one end of the blow hole, and then an iron bar is used to push the cork to the designated position. According to the different specifications of Di, the position of the cork to the center of the blow hole are as follows (Figure 30). For this procedure, only Di uses a cork, but Xiao not. Figure 27 is the cork used on Di. Table 5 is the distance of cork to the center of blow hole.

SIZE:

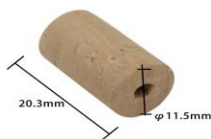


Figure 26 Cork

Photo: Li Xingchen

Table 6 The distance of cork to the center of blow hole

Key	C	D	E	F	G
MM	16mm	15mm	14mm	13mm	12mm

Make: Li Xingchen

18. Adjust the pitch

The first step is to adjust the pitch and intonation between the holes. The second step is to adjust the intonation of the three octaves. The tools required are a hole knife (figure 28) and a tuner (figure 29). The shape of the hole is required to be oval. The width of the ellipse is not greater than the radius of the inner diameter, and each hole is large inside and small outside. The inclination is between 45° and 50° . The hole should be smooth and uniform. According to the key informant, the experience of adjusting the hole is that if the middle tone is lower, the hole will be expanded up (in the direction of the blow hole), and if the high tone is lower, the hole will be expanded down (in the direction of the tail). This is true of both Di and Xiao.



Figure 27 Hole knife

Photo: Li Xingchen

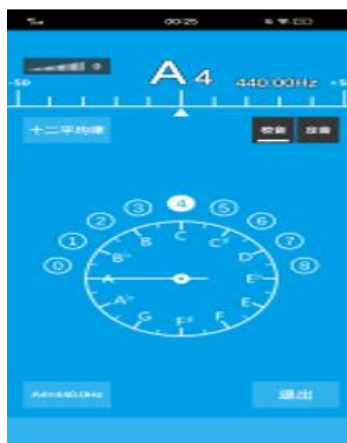


Figure 28 Tuner

Make: Li Xingchen

19. polishing

After the above process is completed, the instrument is polished, usually using sandpaper. The sandpaper is repeatedly polished on the surface of the instrument until the surface is smooth and ready for the next carving process.

Carving

20. carving technique

The carving technique of *Yuping Xiaodi* appeared at the end of the Qing Dynasty. Although it has a history of only one hundred years, it has developed rapidly, and its unique carving technique has reached a wonderful state. It is worth mentioning that the carving technology of *Yuping Xiaodi* is completely hand-made. This is a unique skill and the most difficult part of the entire production process. Only a few inheritors can do this. It takes decades of work to complete. The original carvings were only ancient poems on *Yuping Xiaodi* bamboo pipes, and later evolved into dragons, phoenixes, flowers, birds, insects, fish, landscapes and other patterns. The carved patterns also add a strong cultural connotation to the *Yuping Xiaodi*, which has deeply won the love of players, fans and collectors. The tools used in the engraving process are: single-knife (figure 30) and double-knife (figure 31), single-knife lettering, and double-knife carving patterns.



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Figure 29 Single-knife

Make: Li Xingchen



Figure 30 Double-knife

Make: Li Xingchen

The most representative sculpture composition is the dragon and phoenix composition. The dragon and the phoenix are artistic images created by the working people of our country with exaggerated and romantic art after a long historical development. The characteristics of the composition are: symmetrical form, strong decoration. Set off with clouds. The dragon and phoenix body appears from time to time, magnificent, with a sense of space and imagination. As follow, figure 32 is the carving process, figure 33 is the dragon and phoenix composition.

A. The image of the dragon on the Di is: tiger head, tiger teeth, fish eyes, crocodile mouth, lion temples, antlers, snake body, fish spine, horsetail, eagle claws, forming the image of dragon.

B. The image of the phoenix on the Xiao is: golden pheasant beak, peacock head, beautiful eyes, mandarin duck body, chicken tail, white crane feet, forming the image of phoenix.



Figure 31 Carving process

Photo: Li Xingchen



Figure 32 Dragon and phoenix composition

Photo: Li Xingchen

Finished product

After the Di and Xiao have undergone the above-mentioned processing, post-processing is required. Depending on the type of musical instrument, the finished product includes some of the above steps. The post-processing is not only to increase the beauty of the instrument, but also to prevent them from cracking, protect the musical instrument and extend the service life.

21. coloring

The color of *Yuping Xiaodi* is decorative. There are certain rules in coloring.

1) If the natural color is light yellow, avoid using yellow, less use orange, red. Because these colors are similar to natural colors, the recognition is not enough.

2) If the natural color is bronze, avoid red, less yellow.

3) If the pattern lines are fine and neat, and the background color is black, it should be painted white, appearing simple and elegant.

22. Varnishing

Lacquer is often used in the production of *Yuping Xiaodi*. Paint colors are usually natural and black, etc. The primer is generally used in shellac solution or mixed with dyes. When painting, use a piece of silk cloth to stick transparent paint evenly on the musical instrument. Painted Di or Xiao should not be placed horizontally. They should be placed on a drying rack to dry. Wait until the primer is dry and finely ground, then apply "nitric acid paint" or "685" varnish.

After painting, bamboo is isolated from the air, which protects the instrument and improves its timbre.

23. Inlaying

Inlaying is the traditional craft of making *Yuping Xiaodi*. A Di or Xiao instrument inlaid with horn ornaments or bone ornaments will become more ornamental. Bone ornaments are made from thick cow bones, which are degreased and bleached. The horn ornament is made of ox horn. And jade ornaments made of jade. For the Di, the bone or horn is placed at the head and tail. In the case of the Xiao, the bone or horn is only installed at the tail, because the head is the blow hole.

24. Binding wire

Binding wire refers to winding and strapping the body of the instrument with strong strings between the holes. The purpose of tying the line has two, one is for beautiful, the other is to prevent the body cracking. It should be noted that this process is suitable for the production of high-grade *Yuping Xiaodi*, ordinary types of commonly used *Yuping Xiaodi* do not need this process. The method of tying the line is: on the body of the Di or Xiao with silk thread, nylon line or fishing line every few centimeters to bind a centimeter wide line, in binding, the line should be tight and smooth, otherwise it will not only affect the appearance, but also cannot protect the instrument. In order to make the tie wire more firm, beautiful, tie wire is tied after the paint. The colors of the commonly used tie wire paint are black and red.

25. Checking

After the post-processing, the need for a final sound correction work. Each Di or Xiao has some variation in diameter, in length, in the position of the sound holes and the air holes, so each instrument has some variation in pitch. This difference is allowed on lower-grade instruments, but deviation in pitch is not allowed on higher-grade professional instruments. Therefore, after the production of Musical Instruments is basically completed, it is necessary to carry out a tuning work on high-grade Musical Instruments. Note correction is mainly to check and adjust the intonation of each scale. The method of adjustment is: according to the pitch

deviation, with a hole knife to correct the sound hole. However, it should be noted that the range of adjustment of Di and Xiao pitch is limited and can only be used as an auxiliary means of subtle adjustment. And for the intonation deviation is too large Di or Xiao, it is not adjusted. This requires us in the process of Musical Instruments to be strictly in accordance with the standard size of fine processing, so as to minimize the difference in intonation.

26. Packaging

Yuping Xiaodi has to be finally packaged, and then it can be sold.

The Making Criterion of *Yuping Xiaodi* Musical Instrument

There is a unified making criterion for *Yuping Xiaodi* musical instruments in Guizhou Province. The criterion is divided into two parts, the first part: Yuping-Di; Part two: Yuping-Xiao. Standardization shall be formulated with a view to developing economy, promoting technological progress, improving product quality, safeguarding the interests of the State and the people and adapting standardization to the needs of modernization and developing economic relations with foreign countries. According to the Standardization Law of the People's Republic of China, criteria are divided into four levels: national criterion, industry criterion, local criterion, enterprise criterion. Local criterion are standards approved and issued by local (province, autonomous region) standardization authorities or professional competent departments and unified in a certain region. The making criterion of *Yuping Xiaodi* belongs to the local criterion of Guizhou Province. No. DB52/T531.1-2007, Guizhou Quality and Technical Supervision Bureau issued, September 6, 2007.

Guizhou province local criterion: Part ONE: *Yuping Xiaodi* – Yuping-Di

1. Scope

This criterion specifies the classification, varieties, specifications, requirements, test methods, inspection rules, labels, packaging, transportation, and storage of Yuping-Di. This criterion applies to Yuping-Di made of red bamboo, golden bamboo, white bamboo, mountain bamboo, and purple bamboo produced in Yuping county.

2. Terms and definitions

Yuping-Di: refers to the Di made of red bamboo, golden bamboo, white bamboo, small mangosteen and purple bamboo produced in Yuping county. The body of Di is carved with dragon, phoenix, poem, and landscape pattern, etc., and it is played transversely. The names of all parts of Yuping-Di shall conform to the provisions in Figure 34.

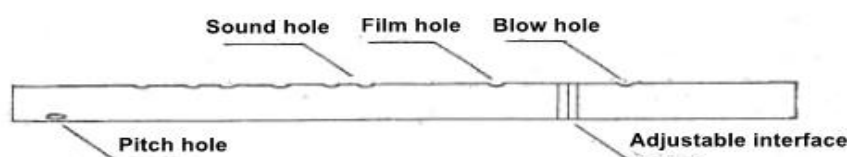


Figure 33 The name of each part of Yuping-Di

Make: Li Xingchen

3. Classification and varieties

3.1 Classification

According to the sound quality, making technology and material selection, it can be divided into advanced products, intermediate products and general products.

3.2 varieties

The varieties of Yuping-Di are: Qu-Di, Bang-Di, Adjusting-Di, Bass-Di .

4. Required

4.1 Raw material

The natural growing section of bamboo shall be more than three years, with more than one bamboo joints, and the materials shall be red bamboo, golden bamboo, white bamboo, mountain bamboo and purple bamboo.

4.2 appearance

4.2.1 Appearance Requirements

The body should be straight, the lower two ends of the bamboo body are flat without barbs, and the bamboo joints are smooth, without bamboo green skin and water pattern scratch ripples, without splitting, moth eating and skin injury.

4.2.2 Uniform tone of the body of Di, full coloring of poems, patterns, factory name and seals, bamboo body should not have color spots, line marks and color erosion marks, smooth and bright paint, the paint meets the requirements of environmental protection.

4.2.3 Poems, patterns and factory name: the arrangement of seals is moderate without deviation, without mistakes and non-standard simplified characters, and the "standard sample" of the current technology shall prevail.

4.2.4 Use adjustable cork stoppers to fit inside diameters.

4.3 Acoustic quality

4.3.1 Tuning System

Twelve-equal tuning System should be used.

4.3.2 standard

Use international Standard tone: a¹ – la – 440 Hz, c¹ – do – 261.6 Hz, d¹ – re – 293.6 Hz, e¹ – mi – 329.6 Hz, f¹ – fa – 349.2 Hz, g¹ – sol – 392 Hz, a¹ – la – 440 Hz, b¹ – si – 493.8 Hz.

4.3.3 Intonation requirements

In addition to meeting the requirements of 4.1.3 in QB/T 1947.1, the pitch of the advanced piece shall not change more than +28 minutes in the case of continuous play. See table 8 for details.

Table 7 The intonation requirements of Yuping-Di

Product level	Deviation not exceeding (Cent)
Advanced	28
Intermediate	30
General	30

Make: Li Xingchen

4.3.4 Sound quality

Should meet the requirements of table 9 as follow:

Table 8 The sound quality requirements of Yuping-Di

Product level	The sound quality requirements
Advanced	Intonation to be accurate, high and bright crisp, bass rich mellow, responsive
Intermediate	Intonation should be accurate, bright treble, thick bass, smooth pronunciation
General	Pronunciation loud

Make: Li Xingchen

5. Logo pattern of product registered trademark



Figure 34 The Logo of *Yuping Xiaodi* trademark

Make: Guizhou Provincial Bureau of Quality and Technical Supervision

Guizhou province local criterion: Part TWO: *Yuping Xiaodi* – *Yuping-Xiao*

1. Scope

This criterion specifies the classification, varieties, specifications, requirements, test methods, inspection rules, labels, packaging, transportation, and storage of *Yuping-Xiao*. This criterion applies to *Yuping-Xiao* made of red bamboo, golden bamboo, white bamboo, mountain bamboo, and purple bamboo produced in *Yuping* county.

2. Terms and definitions

Yuping-Xiao: refers to the Xiao made of red bamboo, golden bamboo, white bamboo, mountain bamboo and purple bamboo produced in Yuping county. The body of Xiao is carved with dragon, phoenix, poem, and landscape pattern, etc., and it is played vertically. Yuping-Xiao is divided into Ping Xiao and Dong Xiao.

Ping Xiao: it refers to the Xiao made of red bamboo, white bamboo, gold bamboo, purple bamboo and mountain bamboo produced in Yuping county. The body of the Xiao is carved with dragons, phoenixes, poems, words, mountains and waters, patterns, etc. It is made according to the tradition with even holes and the hole spacing is measured from the sound hole to the longitudinal center.

Dong Xiao: refers to the red bamboo, white bamboo, gold bamboo, purple bamboo and mountain bamboo produced in Yuping county. The body of the Xiao is carved with dragon, phoenix, poem, poem, landscape, pattern, etc. It is made according to the semitone opening. The hole spacing size is the Xiao with the percentage data opening. The location name of the Xiao shall conform to the provisions in Figure 36.

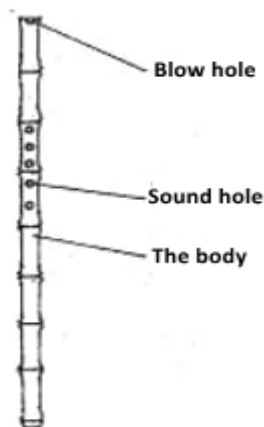


Figure 35 The name of each part of Yuping-Xiao

Make: Li Xingchen

3. Classification and varieties

3.1 Classification

According to the sound quality, making technology and material selection, it can be divided into advanced products, intermediate products and general products.

3.2 varieties

The varieties of Yuping-Xiao are: Ping Xiao, Dong Xiao, Adjusting Xiao.

4. Required

4.1 Raw material

The natural growth section of bamboo is more than three years, and the bamboo has more than seven joints. The materials are red bamboo, white bamboo, golden bamboo, purple bamboo and mountain bamboo.

4.2 appearance

4.2.1 Appearance Requirements

4.2.1 The body is straight, without damage, moth-eaten, splitting, skin damage, mildew, and the upper and lower ends are flat and without barbs. The sound hole is straight, blowing hole to the fifth sound hole is straight, the sixth sound hole is in the middle of the back face line, the tone hole and peach-shaped hole are in the middle of the back face line on both sides of the middle line to the upper part of the middle line.

4.2.2 There is no bamboo film, sundries and paint film in the bamboo tube, no obvious burning marks and knife marks in the hole, and the paint layer meets the requirements of environmental protection.

4.2.3 Advanced and intermediate Ping Xiao and Dong Xiao have regular hollow carving patterns without damage.

4.2.4 Poems, patterns, factory names and seals shall be fully colored, evenly painted, smooth and bright, with bright colors and natural transition colors, without stained dots and lines.

5. Sound quality

The following table 10 lists the sound quality requirements of Yuping-Xiao.

Table 9 The sound quality requirements of Yuping-Xiao

Product level	The sound quality requirements
Advanced	Intonation to be accurate, high and bright crisp, bass rich mellow, responsive
Intermediate	Intonation should be accurate, bright treble, thick bass, smooth pronunciation
General	Pronunciation loud

Make: Li Xingchen

6. Intonation requirements

It should meet the requirements of table 11 as follow:

Table 10 The intonation requirements of Yuping-Xiao

Pitch name	The sound hole	Advanced	Intermediate	General
G	Pitch hole	+ -15	+ -20	+ -25
A	The first hole	+ -15	+ -20	+ -25
B	The second hole	+ -15	+ -20	+ -25
C	The third hole	+ -15	+ -20	+ -25
D	The fourth hole	+ -15	+ -20	+ -25
E	The fifth hole	+ -15	+ -20	+ -25
F	The sixth hole	+ -15	+ -20	+ -25

Make: Li Xingchen

Briefly summarized, this chapter mainly describes the making process of *Yuping Xiaodi*, the making process of Xiao and Di is basically the same, except for a few key steps such as material selection and drilling. The making process consists of 4 steps and 26 detailed processes. Of all the steps, material selection and tuning are the most important, which determine the quality of the instrument. Carving is the most difficult, because it needs to be skillfully operated by hand. The quality of each process will ultimately affect the quality of the instrument. Therefore, every process must be made in strict accordance with the standards. So that you can make high-quality instruments.

Chapter V

The Playing Techniques of Yuping Xiaodi Musical Instrument

In this chapter, the researcher analyzes the playing techniques of *Yuping Xiaodi* musical instrument by using document analysis and practice methods. According to the performance of *Yuping Xiaodi* players and the recognition by authoritative experts, the playing techniques are classified as three levels of techniques; 1) basic techniques, 2) intermediate techniques, 3) advance techniques. The researcher found some representative works of *Yuping Xiaodi* and analyzed the playing techniques in combination with works. This chapter is divided into two parts, Part one: Yuping-Di; Part two: Yuping-Xiao.

Part one: Yuping-Di

Documents:

- 1) Dai, Y. (2013). Zhudi-Grading Test Repertoire of Central Conservatory of Music at Home and Abroad. Central Conservatory of Music Press.
- 2) Zhudi Professional Committee of Shanghai Musicians Association & Tang, J.Q. (2009). Chinese Zhudi Grading Test Album. Shanghai Music Publishing House.
- 3) China Conservatory of Music Examination Committee & Zhang, W. L. & Zhang, J. (2004). Zhudi - a national general textbook for social and artistic level examinations. China Youth Publishing House.

The three books I refer to are from the Central Conservatory of Music, China Conservatory of Music and Shanghai Conservatory of Music, which are the top conservatory of music in China and well known in the world. The editor-in-chief of the three books are Dai Ya, a Xiao & Di professor from the Central Conservatory of Music, Zhang Weiliang, a Xiao & Di professor from the China Conservatory of Music, and Tang Junqiao, a Zhudi professor from the Shanghai Conservatory of Music. They can represent the highest level and highest authority of Chinese Xiao & Di music. The criteria for my selection of Xiao & Di works and three different levels come from the above three professors and three books.



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Works:**Basic technique works:**

- 1) "*Five Clappers*"
- 2) "*Journey to Gusu* "

The above two works are well-known Di musical instrument masterpieces, and they are also must-learned works for beginners. The playing techniques of the two works are basic techniques, emphasizing essential technique. In the classification of grades, belonging to the primary level. Normally, learning 1-3 years can play them.

Intermediate technique works:

- 1) "*Qinchuan Feelings*"
- 2) "*New Song of Herdsmen*"

The above two works have a certain degree of difficulty, emphasizing the use of playing techniques and the use of musical sense. For example, the half-hole fingering techniques and kneading techniques in the first works. In addition, in the second work, it is the technique of long melody line breath control and the technique of imitating horse barking. We can hear the above two works in various competitions or performances. Normally, learning 3-5 years can play them.

Advance technique works:

- 1) "*Solitary Orchid Greeting the Spring*"
- 2) "*Little Soldier Bravely Breaking Through the Blockade*"

The above two works are quite difficult. For example, the circular-breathing technique used in the first work is the top among all playing techniques, and relatively few people can use this technique, and fingering is also relatively difficult. The second work is also very difficult. It covers most of the playing techniques of Northern genre of Di instrument. It is impossible to complete this work without excellent basic techniques, so the level of technique proficiency is very important for the successful performance of this work. Normally, learning 8-10 years can play them.

Part two: Yuping-Xiao

Documents:

1) Lu, X. Y. (2018). 100 Chinese Xiao Works. Shanghai: Shanghai Music Publishing House.

2) Hu, J.X. & Yi, J. Y. (2003). Standard repertoire of Xiaodi performance test: students' artistic quality level test. Sichuan University Press.

3) Wang, C. H. (2000). Primary to advanced level of Xiao Performance. China Drama Publishing House.

4) Zhang, W. L. (1995). Xiao playing methods. People's Music Publishing House.

These four books are about the playing techniques, works and different levels of division of Xiao. They are four authoritative books, among them, the researcher of the fourth book is Wang Ciheng, the chief Xiao & Di performer of the Central Chinese Orchestra, who was my teacher. His book has divided the works into elementary, intermediate and advanced according to the difficulty of the Xiao technique. So, we can refer to the above four books for the classification of works.

Works:

Basic technique works:

1) "*a parting tune with a thrice repeated refrain*"

This work is one of the top ten Gu-chin works in China. It is also a fine work of ancient Chinese traditional folk music and has been widely sung by people for thousands of years. The song has long been loved by people, and has become a necessary work for some professional groups and singers. It has also been used in other musical forms, and is an enduring classic. Therefore, most people are familiar with the melody of this work. Because of its simple technique and fingering, many people can play it.

Intermediate technique works:

1) "*Southern Rhyme*"

Due to the addition of some pentatonic scales and playing techniques, it is considered intermediate. The modality structure of this piece is very complicated. Some of the players can play this work. The difficulty is moderate.

Advance technique works:

1) *"Regrets of the Lover Stars"*

This work is a famous song of Chinese classical music, is the classic of Chinese classical music. Usually only very famous Xiao players play this work. There are not many people who can play this work well.

The Playing Techniques of Yuping-Di musical instrument

Di is the oldest, most characteristic and representative national wind instrument in China. After thousands of years of development, playing techniques are becoming perfect. From some ancient murals and historical records, we know that the performance in ancient times and today's performance are very similar in appearance and form, but the performance techniques are far from so rich. The playing techniques of Di are developing well in modern time. In addition to some traditional works and techniques, in recent years, many famous composers have also created many excellent new works for Di instrument for solo, ensemble and orchestra, greatly enriching the playing techniques and expression. Di is not only a Chinese musical instrument, it has also gone to the world stage, and got a great development. Di has many playing techniques, the researcher summarized and sorted them out.

How does playing techniques come about? Generally speaking, the playing technique of musicians is a complex and composed of many parts of psychological and physiological elements, which needs scientific, systematic and standardized training. For the Di musical instrument, the playing techniques consists of three important parts: breath, fingers and tongue. These three parts of the techniques of mutual cooperation, in the actual performance. Is indivisible. If the performer wants to use it flexibly, he should first carry out targeted and effective training, and finally he can naturally integrate into the performance, otherwise he cannot reach a high level. High quality.

1. Breath

Di is a pneumatic instrument, and its performance is largely reflected in the breath. Breath is related to the timbre of the performance. the continuity of the phrase, the integrity of the music performance, and so on. Therefore, for performers, practicing solid basic breath techniques is the most basic foundation for a playing career. In the past, the elders taught that when playing, one should breathe deep into the belly ("belly" is about three fingers below the navel). The best method of breathing is chest and abdomen breathing, so that the pronunciation is solid and full.

Beginners can lie down when the natural breathing method or smell the flowers as a reference to experience breathing, if the beginning of the trapped in the "chest, abdominal chest breathing" and other concepts in the whirlpool, but will feel more confused. We say that the natural and relaxed state is the scientific way of breathing, and only when it is used can the breath be smooth and the tone be firm. How to practice breath? The first exercise to do is to play "long notes" consistently. " This practice is the most important part of the content of basic techniques, whether beginners or professional players, cannot ignore its role, but should adhere to the accumulation of days and months, persistent practice, will be very helpful to the breath. Beginners, especially young children, should follow scientific training methods to practice long tones, cultivate correct breathing methods, instill correct aesthetic concepts of timbre, emphasize gradual progress, and do not rush for success. The first training can be played four beats, with the second hand of the clock as the calculation standard (namely four beats), slowly extended to six beats, eight beats, ten beats or even longer. It should be noted that we should not blindly pursue time growth and ignore the quality of long notes. If you lose timbre, tone quality and intonation, the practice will not get satisfactory results. Should be full in tone. On the basis of clean sound quality and even and smooth breath, prolong the duration as far as possible.

2.Fingers

The Di instrument we commonly see now is six-hole, finger elasticity is very important in fingering training. To train the ability of independent movement of fingers at anytime and anywhere, so that each finger can do elastic beating and even, lasting, flexible. In any case, the flute holding position should be relaxed with the fingers in a natural arc. Sometimes blowing can feel stiff arm shoulder, so always check whether their posture is correct, the body also wants relaxation. Pay special attention to the ring fingers. Depending on the situation, the less flexible the fingers are, the more you need to train them. Each day, each of the six fingers should do a separate flex exercise. How to train finger techniques? Let's take the trill technique as an example. The use of trill technique is universal and common in any style of music. Dexterity is required when playing. Uniform frequency and uniform timbre. Beginners can practice tremolo on the basis of playing long notes and avoid stiff fingers. Any practice needs a certain process, step by step method, from slow to fast and even use freely. When practicing, do not blindly seek fast and

ignore the shape of fingers and limbs. Even the arms and flute shake together. Such practice is not effective practice, nor can it achieve the purpose of practice.






3. Tongue

Tonguing techniques can be divided into single-tonguing, double-tonguing, triple-tonguing, light-tonguing, broken-tonguing, air-tonguing, lip-tonguing, etc. single-tonguing, pronounce the "T", but do not make a sound; double-tonguing pronounce "TK", but do not make a sound; "TTK" pronounce is issued when triple-tonguing, only the movement is silent, so as to facilitate learners to find the best state and position of tongue when playing. Articulation performance pays attention to clean and strong, full tone and sound quality unity, some brisk and lively songs also require articulation fast and smooth. When the performer is practicing, the root of the tongue should be relaxed, the tip of the tongue should be light, solid practice, from quality to quantity, ask yourself step by step.

The playing techniques of Di instrument generally refers to the methods and skills of playing summarized in the long-term accumulation of musical performance and playing principles. There are various types of Di instrument playing techniques. Usually, we classify playing techniques according to genres. Playing techniques can be divided into northern and southern genres. North genre techniques: tonguing techniques, flutter-tonguing glide, glide techniques, "Duo-yin" (In Chinese), etc. South techniques: trill, upper neighbor tone, Lower neighbor tone, "Zeng-yin" (In Chinese), etc. Of course, there are some new techniques and special techniques, such as circular breathing technique and circular double-tonguing technique. Nowadays, the playing technology of Di is booming. In addition to some traditional works and techniques, in recent years, many famous composers have also created many excellent solo, ensemble and new works for Di instrument, greatly enriching the flute playing techniques and expression. Di is not only a Chinese musical instrument, it has also come to the world stage, and has been a great development.

The systematic analysis and exploration of Di instrument playing techniques can standardize the common playing techniques and the application of different techniques in different musical styles of Di instrument music. The following table 12 lists 20 commonly used playing techniques of Di musical instrument.

Table 11 Playing symbol of Di musical instrument

No.	Name	Mark	No	Name	Mark
1	Breathing techniques	v	11	Appoggiatura	ㄨㄛ
2	Single-tonguing	T ▼	12	Upper neighbor tone	又
3	Double-tonguing	TK ▼▼	13	Lower neighbor tone	丁
4	Triple-tonguing	TTK TKT	14	Zeng-yin	贝
5	Flutter-tonguing	*	15	Circular breathing	⊙
6	Glide techniques		16	Flying finger	飞
7	"Duo-yin"		17	Overtone	○
8	"Li-yin"		18	Throat sound	⊗
9	Trill	tr	19	Stomach Vibrato	
10	Mordent technique		20	Knead sound	U

Make: Li Xingchen

1. Breathing techniques

The breathing techniques of Di playing include: chest breathing, abdominal breathing and combined breathing (also called chest and abdomen breathing). Chest breathing is breathing into the chest; Abdominal breathing is the abdominal position of the respiratory tract. The playing symbol is " v ".

2. Combined breathing techniques

Now widely recognized and adopted is the combined breathing method, also known as the combined thoracic-abdominal breathing method. All parts of the body should be kept as natural as possible, especially the throat and shoulders should maintain a normal natural relaxation. Inhale at the same time from the mouth and nose to the bottom of the lungs and above the diaphragm. At this time, the lower sternum and the muscles around the waist naturally expand outward. Be careful not to lift your chest and shoulders when you inhale, and go down. When inhaling, do not deliberately prop up your belly to avoid uncoordinated movements, and do not over inhale, so as not to cause chest tightness and affect performance.

3. Breath control technique

The requirements for breath control are: the volume must be strong and weak; the pitch must be strong but not high, weak but not low, and the tone must be strong but not noisy, weak but not weak. Beginners should first blow out the volume and tone of the Di, insist on long tone training, and then enter the breath control link when they have a certain level of vigor.

4. Tonguing techniques technique

Tonguing is the most commonly used technique in the playing techniques of Di. Tonguing techniques can be divided into single-tonguing, double-tonguing, triple-tonguing, light-tonguing, broken-tonguing, air-tonguing, lip-tonguing, etc.

5. Single-tonguing technique

When playing single-tonguing, the mouth reads the pronunciation posture of the word "T", and the tip of the tongue is pressed against the upper gum to form an obstruction, and then the air flow breaks through the obstruction of the tip of the tongue and the upper gum to form a burst sound. Generally speaking, a single-tonguing is half or less short than the h value of a normal note. The use of single-tonguing is very wide, in some relatively light, active music most people will use single-tonguing technique. Do not practice too fast at the beginning, tongue and fingers work closely together, the pronunciation should be firm, strong, clear, granular, and maintain the consistency of strength and speed. Mr. Zhao Songting, the famous Di instrument artist has vividly compared the single-tonguing technique to the violin bow technique, strengthen the single-tonguing training is the foundation of the practice of double-tonguing and triple-tonguing technique, should be firmly master the single-tonguing technique, and then start to gradually practice other kinds of tonguing techniques. The playing symbol is "T" or "▼". Example of single-tonguing notation in figure 37 is as follows:



Figure 36 Examples of single-tonguing notation (two playing symbols)

Make: Li Xingchen

6. Double-tonguing technique

Double-tonguing is the sound of the tongue similar to "T, K", such as "TK, TKTK, TKTKTKTK", which forms the playing method of double-tonguing. It also does not read aloud, but only acts with the tongue. The use of double-tonguing technique is very wide, and it is often used in many cheerful and active music. At the beginning of the practice speed is not too fast, tongue and fingers closely cooperate, requires "T" sound and "K" sound between the tone color uniform, consistent volume, strong hook, pronunciation should be firm, clear, granular, and maintain the consistency of strength and speed. General double-tonguing technique appear in allegro sections, so every sound cannot be missed in training, to do every sound on the score are clear, solid, must not mix; The rhythm aspect should have the sense of steady rhythm. The playing symbol is "TK" or "▼▼". Example of double-tonguing notation in figure 38 is as follows:



Figure 37 Examples of double-tonguing musical notation (two playing symbols)

Make: Li Xingchen

7. Triple-tonguing technique

Triple-tonguing, playing method is basically similar to double-tonguing, but in front or behind the double-tonguing plus a single-tonguing, namely the formation of triple-tonguing playing technology. The triple-tonguing technique is generally used in the rhythm of the first eighth note and the sixteenth note, or in the rhythm of the first sixteenth note and the back eighth note. Triple-tonguing is our daily speech "TTK" (a stack of a single word) continuous, such as "TTK" or "TKT", which forms the triple-tonguing playing method, also do not read aloud, but the tongue action is the same. The technique is mostly used in cheerful and active northern music, such as the large section of the first quaver and the last sixteenth quaver in the "*herdsmen's New Song*", which is used to imitate the rhythm of the horse's hooves. The speed should not be too fast at the beginning of the practice. Tongue and fingers should be closely coordinated, and the tone

color, volume and strength between "T" and "TK" should be uniform. Pronunciation should be firm, clear, granular, and consistent with force and speed. Generally, the technique of triple-tonguing appears in allegro sections, so every sound cannot be missed in training, to do every sound on the score is clear, solid, must not mix; The rhythm should be steady and rhythmic, especially between the "T" and "TK" sounds at equal speed. The playing symbol is "TTK" or "TKT" or "▼▼▼". Example of the triple-tonguing in figure 39 is as follows:



Figure 38 Examples of triple-tonguing musical notation (two playing symbols)

Make: Li Xingchen

The musical notation fragment of the work "A little soldier brave blockade line" with triple-tonguing technique in figure 40 as follows:



Figure 39 The fragment with triple-tonguing technique

Make: Li Xingchen

When playing this example, we should pay attention to the evenness of the forte and sixteenth quavers of the first section of each section, and the first note of the triple-tonguing should be strong, not soft. The timing of one quaver and two sixteenth quavers should be as equal as possible. At the same time, breath training is needed between quaver and sixteenth quaver to ensure the integrity of the phrase.

8. Flutter-tonguing technique

Flutter-tonguing technique is mostly used in the music work with warm emotions and rough music. The playing method is to play "du-lu" with the tongue before the tonic, and the breath pushes the tongue to continue playing in the state of "du-lu". Compared with the usual long note performance, flutter-tonguing seems like noise, but appropriate use in music, can increase the interest and imitation of music, make music lively, playful, vivid and clever. The root of the tongue or ear itching may occur during the initial practice of this technique, which requires persistence in overcoming discomfort to complete the training of flutter-tonguing. Fancy tongue is mainly to train the tongue with greater intensity, so it is not only endurance training, but more importantly, the sensitivity and relaxation of the tongue of the performer. The playing symbol of flutter-tonguing is marked as "*". Example of the flutter-tonguing in figure 41 is as follows:



Figure 40 Examples of flutter-tonguing musical notation

Make: Li Xingchen

The musical notation fragment of the work "Morning" with flutter-tonguing technique in figure 42 as follows:



Figure 41 The fragment with flutter-tonguing technique

Make: Li Xingchen

9. Glide techniques

There are three commonly used glide techniques, namely upper-glide, down-glide and round- (double glide), which are used to simulate human singing and bird singing. On the basis of

the stable sound, upper-glide, there are two degrees, three degrees, four degrees, five degrees, six degrees, seven degrees upper-glide; On the basis of the stable sound, the down-glide is played. Similar to the upper-glide, the downward glide also has two, three, four, five, six, and seven degrees of glide. The round-glide is a combination of up and down glide, which can glide up and down, or glide down and up. When playing glide, the timbre should be full and the volume should be strong. The notes must be seamlessly connected without sudden disconnection, and a sense of humor and humor should be played to simulate the timbre characteristics of human voice and bird song as far as possible. The training of glide is not complicated, it is a special skill to train finger sensitivity in performance. It is easy to master, but difficult to practice well. It is important to have scientific training methods and persevere. The playing symbol of the upper-glide is marked as "↗"; The playing symbol of down-glide is marked as "↘"; The playing symbol of round-glide marked as "↔". Examples of the glide techniques are as follows in figure 43:

1) Upper-glide:



2) Down-glide:



3) Round-glide:



Figure 42 Examples of glide technique musical notation

Make: Li Xingchen

The pentatonic scale training of slide is very important. If you want to use it flexibly in music, you must pay more attention to the pentatonic scale training. The slide from one tone to another must not be blurred, slow and gradual to the next. You also have to deal with the relationship between the two notes and keep your mouth strong. First master the technology of

Major second slide, gradually increase the degree of third, fourth, fifth, sixth and seventh slide. The skillful use of slide can add expressiveness and humor to the music.

10. Duo-yin technique (In Chinese)

"Duo-yin" is a very special sound effect, is by a sound direct, decisive, agile transition to another sound, its sound direct, short, strong, powerful, no transition traces. Pay attention to the coordination of breath and strength, abdominal muscle control to have power. When playing, the breath is closely combined with the fingers. While the abdominal muscles are forcibly contracted, the fingers rapidly and forcefully close the required sound hole, without space traces. The playing symbol of "Duo-yin" marked as "↓".



Figure 43 Examples of "Duo-yin" technique musical notation

Make: Li Xingchen

11. Li-yin technique (In Chinese)

The playing symbol of "Li-yin" is marked as "↗" and "↘", respectively for the "upper-Li-yin" and "down-Li-yin". The performance effect of "upper-Li-yin" is from the bass to the treble rapidly step by step. When playing the lowest tone, fingers from the lowest tone to the highest tone in the process of excessive one by one, this process should be clear, smooth, natural, by all means avoid the first few sounds uniform, the last few sounds muddle through, unclear or leakage. When practicing the "upper-Li-yin", you can train at a slow speed, and then gradually accelerate the speed, and ensure that there is no sound leakage, uniform speed and regular playing. During training, attention should be paid to the coordination of breath and fingers. Breath is required to be relaxed, elastic and clean, and fingers should be lifted evenly and quickly one by one. The performance effect of "down-Li-yin" is from high tone to low tone rapidly descending step by step. When playing the highest tone, pay attention to the mouth strength, the timbre is unified, and the fingers fall down one by one in the process of transition from the highest tone to the lowest tone. This process should be smooth and natural, without missing notes or ambiguities.

When practicing "down-Li-yin", you also need to slow down first, and then gradually increase the speed, to play regularly and uniformly. As a grace note technique, the performance of Li-yin should not occupy the time value of the phrase, must be completed in the specified beat. Li-yin is a sequence of fingers played, up-down or down-up. It's a rapid scale movement, and it's a rapid sequence of fingers, rather than a scale performance.

12. Trill technique ("Chan-yin" in Chinese)

Trill technique is a rapid movement of one finger between the original note and the adjacent note above. The trill playing symbol is marked "tr", short for Toronto Raptors. The most commonly used is the trill between two adjacent notes, which is a playing technique formed by rapid and even changes between the upper second note and the original note, which originally produced a stable long note. The termination of a trill usually rests on the original note. Trill technique often appears in the lead melody of many flute songs, which expresses the feeling of being elegant and from far to near, and is full of singing characteristics. It appears more in *Kunqu* music and *Jiangnan south Yangzi string and pipe ensemble* music. The purpose of trill training is to strengthen the flexibility and elasticity of fingers. During practice, attention should be paid to the relaxation and coordination of arms and fingers. The playing effect should not be fast or slow, but clear, even, lasting and accurate. Practice should be slow first, gradually speed up, and finally make each finger to play fast, even and skilled effect. The second trill is played by vibrating a single finger. Take DO (C') in C as an example. This trill is vibrating the ring finger on the fourth hole of the Di. Examples of the musical notation and performance of the second trill of the first beat and a continuous second trill are as follows in figure 45:



Figure 44 Examples of trill technique musical notation

Make: Li Xingchen

13. Appoggiatura technique ("Yi-yin" in Chinese)

In many pieces of music, it is common to see a small note above the slope of the note, which is called appoggiatura. The appoggiatura is attached to the tonic, and this small note can be one, called a single appoggiatura, or multiple, called a compound appoggiatura. Appoggiatura has the function of decorative tonic, which cannot be overemphasized, but also cannot be ignored. During practice, attention should be paid to the control and processing of the appoggiatura sound head, and the playing symbols of appoggiatura marked as "ㄣ" or "ㄣ" in numbered musical notation, and "ㄣ" in musical notation.



Figure 45 Examples of appoggiatura technique musical notation

Make: Li Xingchen

14. Upper neighbor tone technique ("Die-yin" in Chinese)

The playing symbol of upper neighbor tone is marked as "ㄨ", which has decorative function. "Die-yin" is when playing two homophonic sounds, quickly press your finger on the finger hole of the second homophonic tone (the sound effect of the original tone and the upper second or third tone appears), so that the two sounds have one A feeling of overlap. "Die-yin" can be said to be a "very fast grace note", which cannot be played as appoggiatura. Remember that the appoggiatura comes before the first note and the upper neighbor tone finger movement comes after the first note; However short the appoggiatura is, there is a process, and the finger movement of the second note of the upper neighbor tone is the same as the beat of the second note, and we can only feel its presence. Because of the rapid opening and closing of the fingers, the overtone is not time, so it is called a quick grace note. It ingeniously enriched the relationship between the two tones, so that the two tones both separate, but also inseparable, resulting in a kind of pleasing sound color. Examples of the upper neighbor tone are as follows:

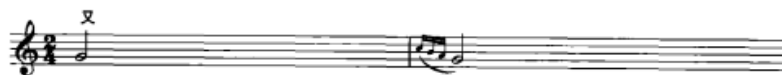


Figure 46 Examples of upper neighbor tone musical notation

Make: Li Xingchen

15. Lower neighbor tone technique ("Da-yin" in Chinese)

The playing symbol for lower neighbor tone is marked "丿", which often appears on the second note of two repetitions and is played by tapping the finger lightly over the note. The playing method is: quickly hit the original finger hole of the open finger, so that it does not need to spit lightly or single spit to distinguish the two notes. Lower neighbor tone is also one of the four techniques in *Jiangnan south Yangzi string and pipe ensemble*. It is necessary to keep the breath in the state of the first note when playing, and only hit the flute hole at the bottom when playing the second note. The use of lower neighbor tone in Di music can vividly imitate the charm of *Kun-qu* singing. When using it, we should pay attention to finger relaxation, dexterity and elasticity, must not be clumsy and weak, and the charm of music can be pointed to. Taking Do (C) in C (Di) as an example, lower neighbor tone performance is to play the do sound first -- beat, and keep the breath and continue to play until the second beat. The index finger gently hits the third hole of the Di at a time -- that is, staccato and rhymes under the condition that the breath is kept constant. Examples of the lower neighbor tone are as follows:

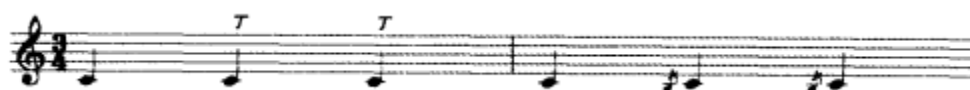


Figure 47 Examples of lower neighbor tone musical notation

Make: Li Xingchen

16. Zeng-yin (In Chinese) technique

The playing symbol of "Zeng-yin" is marked as "ㄣ", which is commonly interpreted as sending the short grace note from the back to the front. The main tone of a phrase, hence the complimentary tone, often appears at the end of a phrase. The playing method is to quickly stop the melody four or five degrees above the melody at the end of the phrase. This technique is mostly used in *Kun-qu opera* and *Jiangnan south Yangzi string and pipe ensemble*, indicating the

beginning of the next phrase. Since "Zeng-yin" is a small note added after the main note, the complimentary note should be played only slightly when the main note is about to stop. The purpose of "Zeng-yin" training is to strengthen the coordination between fingers and breath, and hold the breath at the same time when fingers pick it up. Pay attention to finger relaxation, breath and finger closely cooperate, playing volume should be as weak as possible, must not appear other noises. At the end of playing this technique, a large amount of breath is taken quickly in order to play the next phrase and maintain the continuity between the phrases. There is a nice difference between the use of "Zeng-yin" in a phrase and the treatment of a weak ending phrase, which is intended to bring the music to a gradual, slow halt. The technique of "Zeng-yin" makes the music more flexible and foreshadows the arrival of the next phrase. In *Si-zhu* music, the third and seventh tones are commonly used. Take Do (E ') of C Di as an example, complimentary performance is the third complimentary tone, and when do ends within the regular beat, four. The ring finger above the five or six finger holes. The middle finger and index finger are picked up at the same time, and the breath is stopped. At this time, the gift sound of Do is played. The time value of the main F sound must not be excessively occupied in the performance of the complimentary tone, and must be completed in the specified time value. At the end of Do note in the regular rhythm, the ring finger, middle finger and index finger above the four, five and six finger holes are raised at the same time, and the breath stops. At this time, the Do note is played. The time value of the main F sound must not be excessively occupied in the performance of the "Zeng-yin", and must be completed in the specified time value. Examples of the "Zeng-yin" are as follows in figure 49:

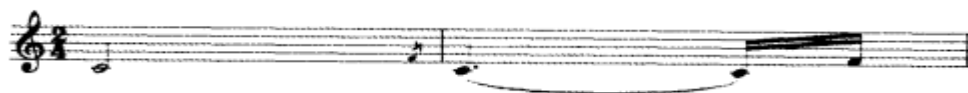


Figure 48 Examples of "Zeng-yin" musical notation

Make: Li Xingchen

17. Circular breathing technique

The playing symbol of "Zeng-yin" is marked as "⑤". The principle of circular breathing technique is to compress the air in the thoracic cavity through the muscles around the oral cavity to make a small amount of air to make a sound, which makes up for the interrupted air flow due

to inhalation. When practicing squeezing, the mouth shape should be the same as usual when playing the Di instrument. When squeezing, squeeze the sound while inhaling in the nose to form a circulating breath. circular breathing technique was originally the playing technique of the folk musical instrument Suona horn in China. The famous Di instrument master Mr. Zhao Songting first developed it to play on the Di. It should be said that it is more difficult to use this playing technique on the Di instrument. It must have a long time of hard work. Training can be used freely, but it is not difficult to learn as long as the training is good. Four steps to the circular breathing technique: 1) You don't need to practice on the instrument first, you can learn the basic movement of circular breathing technique first. The lips make a blowing mouth, through the contraction of the oral muscles to squeeze out the air from the mouth, the mouth wind should be thin, to feel the mouth to squeeze out while inhaling air in the nose, and then exhale, so that the flow of air. 2) When applied to the Di, pay attention to not drum cheeks, breathe when the mouth cannot change, do long blowing constantly. 3) Use the "bass", "schwa" and "trill" to practice circular breathing technique, because it is easy to control with these sounds. 4) Gradually apply to the melody, and do it naturally and freely.

18. Circular double-tonguing technique

The playing method is: 1) Change the double-tonguing movement from "TKTK" to "TPTK".

2) Use the circular breathing technique when the tongue and lips make the "P" motion. This technique is very difficult and has not yet been widely used. Interested enthusiasts can explore the practice after mastering the technique of circular breathing.

19. Flying finger technique

Flying finger is a technique that has little use in practice, but is used in many wind instruments. The method is: hold the Di in the left hand, press the finger, the right hand leaved the Di, three or four fingers on the figure hole left and right wide strokes (with the strength of the forearm), will produce a very special effect, the sound momentum is very exaggerated, and the feeling is very strong, very suitable for the performance of warm and heroic musical mood.

Flying finger can also be used with flutter tonguing and other techniques, also have very good effect. The playing symbol of flying finger technique is marked as "飞".

20. Overtone technique

The overtone refers to playing a fifth relative tone parallel to the original tone (solid tone) on the Di instrument through the principle of articulation of the tone series with a special playing method. The overtone can produce a quiet and implicit tone. When playing overtones, it is very important to grasp the strength. Some of them are like the lucky method of playing Xiao instrument. The abdominal control should be strengthened, but the gas should not be urgent. The damper should be concentrated, but the mouth should be enlarged; Use a moderate amount of force, because too much or too slow will only produce a real sound, not an overtone. Overtones blow out to maintain stability, usually overtones are not very strong, too strong will make the sound broken, this is the characteristics of overtones. The playing symbol of overtone technique is marked as "○".

21. Throat sound technique

Throat sounds are sounds that come out of the throat, and this technique used to be used in opera accompaniment. The method of playing is to vibrate the throat to make the sound of "woo" and "ao", and at the same time to blow out the sound of Di instrument, so that the two sounds together, is a kind of artistic expression of singing while blowing. It can be in the same degree, it can also be in different degrees, like a chorus effect, very attractive. However, it should be noted that although it is pronounced with the throat, the throat should not be too tense, otherwise it will lose control of the mouth wind and affect the sound of the flute. It is suggested that after having a certain foundation of performance, we should do the practice of guttural voice again, so as to have good effect. In recent years, this technique has been used in some modern works. The playing symbol of overtone technique is marked as "⊗".

22. Stomach Vibrato technique

Stomach vibration mainly relies on the abdominal contraction force caused by the air pulsation and generation. Stomach vibration can be divided into big, small, fast and slow, which

should be determined according to the content of music in actual performance. Generally speaking, in some slower stretch rhythm and long lyrical melody used more, it can make the music get a natural. Loose and melodious, cannot be used in fast playing. The melody of singing should use uniform and free stomach vibration sound, passion, grief and anger melody is used exaggerated stomach vibration sound. Stomach vibration has the same effect as the string-rubbing effect of stringed instruments and the chattering effect (meaning very small pitch fluctuations) produced by vocal actors when they sing. Stomach vibration can be used flexibly under the premise of ensuring the intonation, and it is required to be uniform and smooth. Should first of all to avoid deliberately large vibration of the air flow, more taboo with chest breathing or laryngeal knot to shake the air flow, so that the music produces a non-crying and non-laughing effect. The correct method is to use abdominal breathing, so that the air flow naturally and gently exhaled, to obtain the stretching bel Canto effect. The playing symbol of stomach vibration technique is marked as "~~~~".

23. Mordent technique

Mordent is a grace note that starts with the main note and moves up or down quickly between adjacent notes. Mordent are made by adding a short auxiliary above or below the two main notes between them. It is divided into upper-mordent and lower-mordent. The playing symbol of stomach vibration technique is marked as "♬".

24. Knead sound technique

Knead the two fingers slightly on top of the original note and then return to the original note. The playing symbol of knead sound technique is marked as "U".

The Analysis of Yuping Di Musical Instrument Works

1. Basic techniques works:

- 1) *"Five Clappers"*
- 2) *"Journey to Gusu "*

1) "Five Clappers"

"Five Clappers" is arranged by Mr. Feng Zicun and scored by Mr. Huo Wei. The song is based on Hebei folk instrumental music brand "Touch Bang-zi" adapted. "Touch Bang-zi", with its beautiful melody and lively rhythm, is very popular in North China and deeply loved by people, especially by the performer Mr. Feng Zicun. "Five Clappers" is a small variation, which is composed of four parts: the theme music section and three variation sections. Among them, the first section (theme section) is a slow-to-fast adagio, the second section (variation one) is a faster medium, the third section (variation two) is an allegro, and the fourth section (Variation 3) is an extremely fast allegro. The first part of the work is the core theme of the music, which is an open two-part binary form composed of two open music sections. In terms of structure and function, the front section has distinct characteristics of presentation, and the back section has obvious characteristics of expansion (Zhou Shibo,2002). The figure 50 of musical form is as follows:

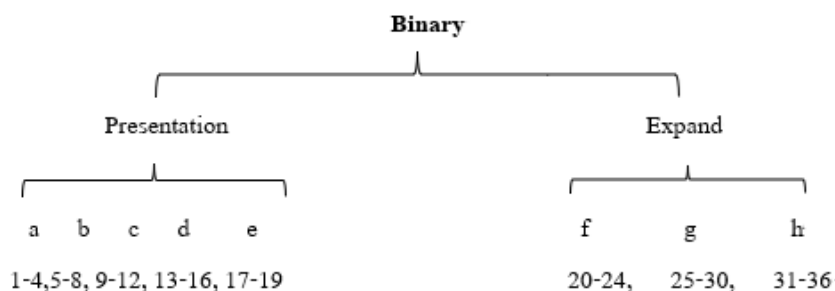


Figure 49 The musical form of "Five Clappers"

Make: Li Xingchen

The first section is the presentation section (1~19 bars), which is composed of five phrases of unequal length. Among them, the bars of the first four phrases are all four bars of equal length, but the fifth phrase is accidentally shortened to three bars. The five-phrase structure of the section and the reduction of the fifth phrase have caused an imbalance in the structure of the entire section, which makes the section open. The researcher is very puzzled about the shortening of the fifth phrase when enjoying this music, and thinks that the shortening of the phrase causes the imbalance of the time ratio between the phrases, which is a pity and unnecessary. But after careful analysis, the researcher has the opposite idea, and then think that in the development of music theme. On the other hand, the subtraction of this section is not only not unnecessary, on the

contrary, it can be regarded as a clever way of developing the theme. Because, as a result of the reduction of this section, step by step to enhance the momentum of the music, so that the music has the urgency and necessity of further development. In addition, the theme development technique used in the first paragraph is mainly free mold in the unit of phrase. It is worth mentioning that the two descending pentatonic scales play a very clever role in the structural control of the scale. As shown in figure 51:



Figure 50 Fragment of "Five Clappers"

Make: Li Xingchen

From the figure above, we can see that the first note of each phrase (It's circled in red) is a downward pentatonic scale variant: A, G, E, D, A (la, sol, mi, re, la); The ending note of each phrase (It's circled in blue) is downward pentatonic scale: E, D, C, A, G (mi, re, dol, la, sol).

The pentatonic scale formed by the ending tone of each phrase constitutes a complete G mode, while the (incomplete) pentatonic scale formed by the first tone implies the existence of the C mode. Therefore, we can infer that there is a basically complete tonality hidden in the presentation section, namely C mode. The hidden C mode and the distinct G mode imply the existence of the relationship between the tonic and dominant tone in the passage, which makes the

tonal structure of the passage also have the characteristic of openness. This fully shows that Chinese folk music in tonality processing techniques.

The second paragraph of the first part consists of three phrases of different lengths, which are quite different from the number of phrases in the presentation section. The length of the first phrase is five bars, the length of the second and third phrases is six bars respectively. The openness of the structure is more prominent.

From the musical material, the second section is the development of the presentation section. The theme material mainly comes from the rhythm pattern of the presentation phrase, and the difference is mainly reflected in the variation of the melody tone. It is well known that the development of music depends mainly on the repetition of certain features of the original material. For example, the extension of the original tonal characteristics, or the extension of the original rhythmic characteristics, and so on. The work is to adopt the original rhythm characteristics of the technique, so that the second section of the work follows the rhythmic characteristics of the first section, showing the characteristics of development. See the following comparison in figure 52 and figure 53:



Figure 51 The first phrase of the presentation section

Make: Li Xingchen



Figure 52 The first phrase of the development section

Make: Li Xingchen

In terms of the relationship between parts of the musical structure, the proportion relationship between the structure and the structure keeps an obvious balance in quantity and a sense of stability in effect, and the length of each part is 36 bars. However, there are some differences in the performance techniques used by each part. For instance, the first section mainly

uses Flutter-tonguing, glide techniques, "Duo-yin" technique, trill technique and other playing techniques; In addition to the above techniques, the second and third sections add a large number of short trills and "Dun-yin" technique; In the fourth music, on the basis of using the above playing techniques, a step forward to add flying fingers and other more dynamic playing techniques.

In addition, in terms of the theme development technique, the different treatment of the internal key sound of the structure on the basis of maintaining the original scale of the structure is also a major feature of this piece. For example, the first phrase of the first paragraph and the first phrase of the fourth paragraph have a great difference in the processing arrangement of the backbone tones respectively. See the following comparison in figure 54 and figure 55:



Figure 53 The first phrase of the first paragraph

Make: Li Xingchen



Figure 54 The first phrase of the fourth paragraph

Make: Li Xingchen

The figure 54 and figure 55 above shows that in terms of the arrangement of the number of key tones, the former phrase has the characteristics of dense front and sparse back, while the latter phrase has the characteristics of sparse front and dense back.

Finally, in terms of musical image and expression, the slow first section (1 ~36 bars) has soft and lyrical image characteristics, which belongs to the singing theme type. The second part of the medium tempo (37~72 bars) has the image characteristics of firmness and power, which belongs to the rhythmic theme type. The fast third music (73~ 110 bars) is characterized by brisk and active images, and also belongs to the rhythmic theme type. On the other hand, the very fast fourth music section (111 ~144 bars) has the image characteristics of enthusiasm and fire, which

gives consideration to two theme types of rhythm and singing. The content and plot depicted in the music is a development process from inside to outside, from quiet to dynamic and from soft to rigid, which vividly shows northerners' personality characteristics and thoughts, which are both enthusiastic and unrestrained.

2) "*Journey to Gusu*"

"*Journey to Gusu*" is composed by famous Di instrument player Mr. Jiang Xianwei in *kunqu* tones. The melody is beautiful, the style is elegant, the line is smooth, has the typical Jiangnan (South of China) music charm. The song spreads widely and is loved by people from all walks of life. "*Journey to Gusu*" is a lyrical work based on scenery. Gusu is now the city of Suzhou in the South of China. The researcher chooses the *Kunqu* tones of jiangnan as the theme material to describe the beautiful scenery of Suzhou, a famous city in the south of the Yangtze River, so as to achieve the exquisite artistic effect. "*Journey to Gusu*" is divided into four parts. The first part is the introduction to stretch the peace. Here the researcher is mainly scenery, depicting the morning mist faintly, landscape wake up. The beautiful scene of the pavilion.

The second part is the lyrical elegance of andante. Here the researcher begins to focus on describing people's inner feelings, expressing the relaxed, relaxed and pleasant inner feelings of people strolling in the scenery with the melody of lyric elegance and even a hint of leisure.

The third part is allegro, its beautiful melody, smooth lines are difficult to describe. Here, the researcher further describes the happiness of people playing in the beautiful scenery, which fully demonstrates the harmony between man and nature, and also implies the profound influence of nature and environment on people.

The fourth part returns to the adagio, which is the reappearance of the changes in the second part. Here is still the writer, the performance of people intoxicated by the beautiful scenery, linger, aftertaste endless thoughts and feelings.

In terms of the structure of the music, due to the large scale of the introduction, the content image of its performance is relatively independent and complete, so it has the meaning of an independent paragraph. It seems that the whole music is composed of four parts. But from the distribution of rhythm and the logic of material development, it is actually a three-part structure. Its overall structure is as follows in figure 56:

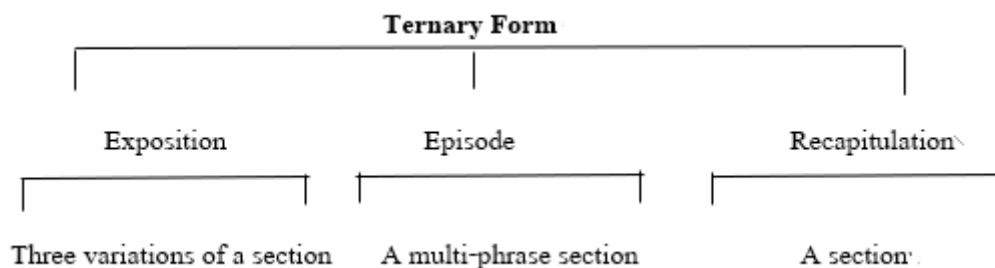


Figure 55 The musical form of "*Journey to Gusu*"

Make: Li Xingchen

The exposition part is a typical variation section. The variation method is "throughout", which not only changes the first half of the section, but also retains the second half of the section. See the comparison of the opening phrases of the three sections below:

The first section:



The second section:



The third section:



Figure 56 The comparison of the opening phrases of the three sections

Make: Li Xingchen

The structure of episode is a multi-phrase paragraph with external extension. The phrase length ratio of each phrase is very free and open, which produces a very dynamic effect. The structural diagram of the episode is as follows in figure 58:

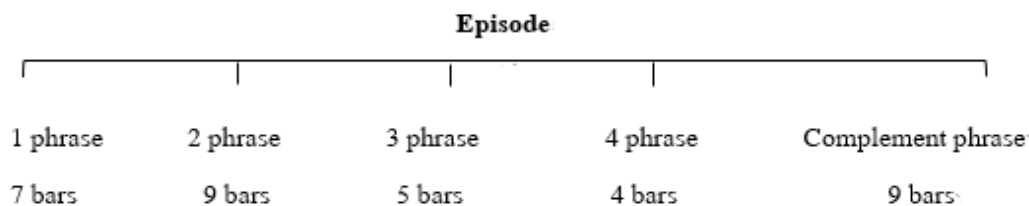


Figure 57 The musical form of episode

Make: Li Xingchen

There are two explanations about the episode: 1) The reason why the last phrase of the paragraph is a supplementary phrase is that there is a complete termination with stable meaning at the end of the fourth phrase of the paragraph; 2) The material source of the second phrase is also worth mentioning, that is, the material of the second phrase seems to be extracted at will from the first phrase, but it is used very freely and properly. See the following comparison in figure 59:

Figure 58 The comparison of the first and second phrase in the episode

Make: Li Xingchen

All in all, "Journey to Gusu" is a beautiful piece of Jiangnan famous music. It has been widely praised by Di instrument players and fans. It's both classic and timeless.

Intermediate technique works:

- 1) "Qinchuan Feelings"
- 2) "New Song of Herdsmen"

1) "*Qinchuan Feelings*"

"*Qinchuan Feelings*" is a Di instrument solo composed by the famous Di player Mr. Ma Di in 1980. This piece of work is based on the local opera in northern Shaanxi -- *Qinqiang Opera*, expressing the researcher's praise of the towering Qinchuan. The music is passionate, graceful and touching, with a strong northwest *Qinqiang* style. "*Qinchuan Feelings*" has been designated as the required repertoire for domestic and international Di musical instrument competitions many times. In April 1989, "*Qinchuan Feelings*" created by Mr. Ma Di won the "National Musical Instrument TV Grand Prix" Excellent Works Award.

Qinchuan refers to the area north of the Tsinling Mountains in China. Mr. Ma Di creatively applied the knead sound technique ("Rou-yin" in Chinese) and sliding techniques of Ban-hu, an accompaniment instrument in Shaanxi *Qinqiang Opera*, to the musical work "*Qinchuan Feelings*", making the Di instrument play a similar effect of knead and sliding the strings of Ban-hu instrument, creating the techniques of playing kneading on the Di instrument, making the music with Shaanxi *Qinqiang opera* characteristics.

The musical form of "*Qinchuan Feelings*" is composed of an introduction and a trilogy. The beat changes frequently ($\frac{4}{4}, \frac{2}{4}, \frac{3}{4}, \frac{2}{4}$). Apart from the introduction, the rest of this work is A parallel trilogy composed of A, B and C. The researcher starts with section A and counts the number of bars. The whole song has 158 bars (according to the numbered musical notation played by Mr. Ma Di). The musical form of "*Qinchuan Feelings*" is as follows in figure 60:

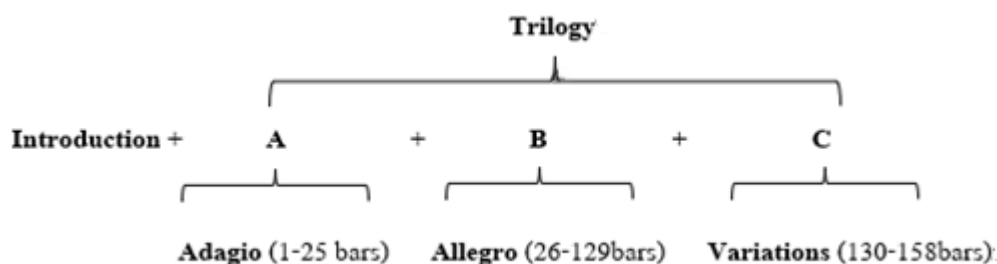


Figure 59 The musical form of "*Qinchuan Feelings*"

Make: Li Xingchen

The introduction is an Andante with passionate and free style. The first note of the introduction is Sol, followed by Sol, Do, Re and Fa, which are very distinctive and represent the majestic Qinchuan with strong strength. We know that the Sol (g') to Do (c) is the most

representative of the sense of power and solemnness, as in the first phrase of "*the national anthem of the People's Republic of China*" and "*the Internationale*". A succession of tapering sixteenth notes made up of Sol, Do, Re is accomplished with tonguing techniques. The following Si notes are very characteristic of *Qinqiang opera* and need to use the kneading technique to complete. The last two-beat long note Sol (g') of the introduction brings out the main melodic interlude of the orchestra's stringed instruments.

Section A is the adagio of bars 1-25. If two bars are used as A phrase, there are eleven phrases in section A. The appearance of Sol, Fa, Do, Si and La in the first phrase makes people feel the obvious Style of *Qinqiang opera*. The 23rd bar is the Andante, and from the 24th bar, the beat changes into $\frac{2}{4}$. This section still starts with the tonic note Sol, and is a very beautiful adagio. In terms of playing techniques, it uses techniques such as kneading, upper neighbor tone, lower neighbor tone, trill, mordent technique, glide technique. From the soft performance at the beginning to the excited performance at the 13th bar to the enthusiastic allegro at the 24th bar, section A has experienced these three different musical levels.

Section B is the allegro section starting at bar 26 and ending at bar 129. The note Sol begins again. This section is a comprehensive use of flutter-tonguing, knead sound, tonguing techniques. There's a riff, and the riff has to be played more liberally. Bar 79 begins with the double-tonguing technique of successive sixteenth notes. Bar 91 changes to $\frac{3}{4}$, bar 93 to $\frac{2}{4}$. This is followed by the long note Re of 41 bars, which needs to be played with the circular breathing technique. The beat changes to $\frac{3}{4}$ beats in bar 114 and $\frac{2}{4}$ beats in bar 118. Next is the four consecutive bars of "Li-yin" technique (In Chinese) that seem to mimic the sound of running water. This section is passionate and unrestrained, and the contrast between strong and weak is obvious. The 63rd bar should be played gently and smoothly.

Section C is an allegro from bar 130 to bar 158. The beat changes to $\frac{2}{2}$. Compared with the allegro of the previous section, the C section develops more smoothly. There are many fewer notes in this section, and the rhythm pattern is sparse. The slow speed of section 151 makes the warm and compact music stop abruptly. After the performer slowly plays the section 152, the music turns to the original speed of allegro, which shows that the People of Qinchuan are full of confidence in the bright future, and also shows the lofty aspirations of qinchuan people willing to make unremitting efforts for a better future.

The following is the analysis of the playing techniques.

Introduction

a. "*Qinchuan Feelings*" requires the Di in E tone as Re to play. The first sounds are marked with an accent ">" above and "ff" below. Start by playing the first phrase of the lead passionately and explosively, with each note clear and powerful in the introduction part.

b. Pay attention to the fingering of the note Fa when playing (as figure 61 shown below): open the first hole and press the half hole of the second hole, and press the other sound holes with corresponding fingers. When blowing this Fa, you must pay attention to the intonation. The three fingers of the right hand can be straightened and slightly attached to the index finger of the right hand after half hole. Usually, beginners tend to blow this note high because of a lack of practice.

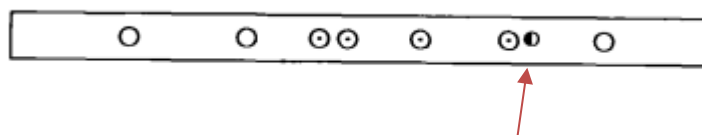


Figure 60 The special fingering of the note Fa

Make: Li Xingchen

c. The three notes Sol, Sol and Re, in contrast to one strong and one weak, are played with double-tonguing playing technique, which requires clarity, accuracy and strength.

d. Many sixteenth notes are formed by the gradual Sol, Do, Re notes, and the phrase is completed with one breath and tongue-techniques. Do not break the notes to blow at the beginning.

e. The note ^bSi (^bB) using the kneading technique, the fingering method is: the left hand presses the sixth hole and the fifth hole half hole, other fingers are lifted up. Then there is a fulcrum on the Di instrument at about one third of the front of the left index finger, and the left index finger is also pressed against the three fingers, forming a kneading sound between Si and Do. At this time, you can play the long tone Si first, and then imitate the stringing techniques of stringed instruments such as Banhu. It is not possible to use trill to replace the kneading. The mark of kneading technique is "U". The performer can observe the way of kneading the string of the player who plays the stringed instrument, which may be helpful for playing kneading on Di instrument. Note: the interval of kneading is between ^bSi and Do, not between $^{\sharp}\text{Si}$ and Do or

between \flat Si and \flat Si. The note \flat Si using kneading technique and the note Fa are used to simulate the bitter sound (or crying tone) in *Qinqiang music*.

Section A

a. Here is the musical notation of the first phrase of section A. In section 1, there are techniques of glide, linking and kneading. At the beginning of the first bar, there are playing techniques of glide, linking and kneading. It is particularly important to note that the first note in first bar is very important. The opening note is in the downbeat position and played with single-tonguing technique.



Figure 61 The musical notation of the first phrase of section A

Make: Li Xingchen

b. Half-hole fingering is used for note Do. This is the need for a gliding playing technique between \flat Si, Do and La.

c. Section A can be divided into two parts. The first part is bars 1 to 12, the music is slow and melodious, like chatting with friends. Melody line ups and downs natural, thought-provoking; The second part is bars 13-25, which is very strong in intensity. In bar 14, high-pitched Fa (d^3 , as shown in figure 80) appears. The fingering method is to open one, three and four holes, while the second and fifth holes are half holes. Be sure to play the Fa (d^3) exactly, and play it with your fingers and breath in close coordination.



Figure 62 The bar 14, high-pitched Fa in the phrase of section A

Make: Li Xingchen

Section B

a. Allegro makes music lively and cheerful, with conversational phrases and more bold melodies; There are lyrical legato phrases, and there are brisk double-tonguing parts, and different styles and musical emotions are expressed.

b. Use the circular breathing technique for the long note Re. Mr. Ma Di played this note in 41 beats. When playing, pay attention to the essentials of circulation ventilation, ventilation should be timely, fast, less traces, mouth strength and mouth wind should be properly coordinated, and maintain a stable damper to play the high pitch.

c. "Li-yin " technique (figure 64)

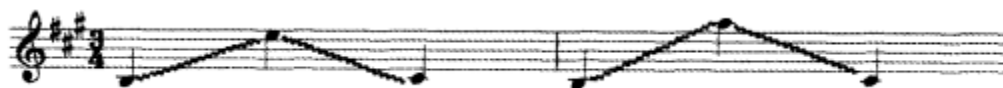


Figure 63 The "Li-yin " technique

Make: Li Xingchen

First of all, we should keep the playing state relaxed and natural, and our fingers should be more natural and flexible. The first is the "Li-yin " from Re (b) to Sol (e²), in which the abundant breath is closely coordinated with the uniform movement of the fingers to produce a rapid ascending scale from Re (b) to sol(e). Then a rapid descending progression from Sol (e²) to Mi (c¹). The Sol (e²) is changed to Do (a²) in the end of the "Li-yin ", and the performance requirements are the same as before.

Section C

The $\frac{2}{2}$ rhythm and the recapitulation of the material make the music even more relaxed and proud. This section starts with 4 bars as a phrase, then gong and wei as the backbone sound to make the music magnificent development. Breathe according to the phrase. Breathe every 4 bars before bar 145.

2) "New Song of Herdsmen"

"New Song of Herdsmen" is composed of Inner Mongolia folk song tones, with a strong flavor of grassland, showing the charming grassland scenery and the poetic herdsmen's grazing life. It was created in 1966 by Mr. Jian Guangyi. This piece of work is loved by the vast number

of Di instrument professionals and amateurs, and has become their regular repertoire. Later, it was included in the UNESCO Music textbook.

The musical form of "New Song of Herdsmen" is composed of an introduction and a trilogy. The trilogy is divided into Section A+B+C.

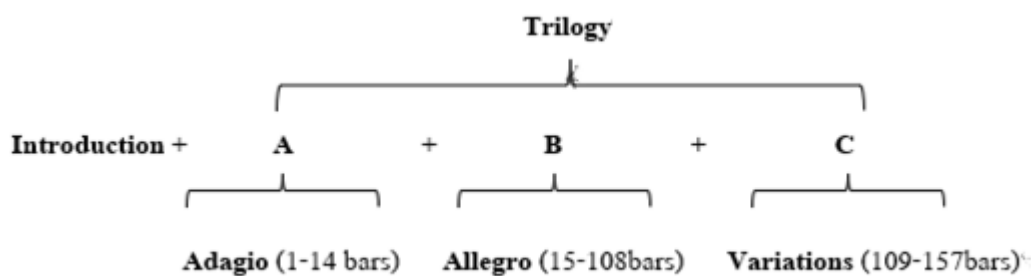


Figure 64 The musical form of "Qinchuan Feelings"

Make: Li Xingchen

Introduction

The introduction is made up of six phrases, showing a picture of the endless prairie. As shown in Figure 66 below:

The musical score for the introduction of "New Song of Herdsmen" is presented in four staves. The first staff is marked "Largo" and begins with a piano (*p*) dynamic. The second staff features a sixteenth-note triplet (marked "6") and a trill (marked "tr"). The third staff includes a seven-note triplet (marked "7"), a nine-note triplet (marked "9"), and a six-note triplet (marked "6"), ending with a mezzo-piano (*mp*) dynamic. The fourth staff is marked "Lento (♩=56) Cantabile" and begins with a five-note triplet (marked "5").

Figure 65 The introduction of "New Song of Herdsmen"

Make: Li Xingchen

Section A

Section A is the adagio section of $\frac{4}{4}$. There are 14 bars and 6 phrases. The music develops around the tonic La(\sharp f) and Mi (\sharp c). Using the playing techniques of trill, upper neighbor tone, lower neighbor tone to describe the vitality of the Mongolian grassland and herdsmen riding horses in the grassland leisurely situation.



Figure 66 The fragment of section A

Make: Li Xingchen

Section B

Section B is the allegro section of $\frac{2}{4}$. This part requires playing with tonguing techniques, showing the herdsmen whipping their horses and competing for grazing. Section B is divided into three parts; Part A is bars 15-34, allegro. In the first phrase of this section, the rhythm pattern of the first quaver of the bass La (\sharp f) and the second quaver of the bass la(F) appears, which is perfectly appropriate to simulate the sound of horses' hooves running on the prairie. Part B is bars 35-76; Part C is bars 77-108. These three parts are interlocking and progressive.



Figure 67 The fragment of section B

Make: Li Xingchen

Section C

Section C is bars 109-157. In terms of emotion, it is more intense, and in terms of speed, it is allegro which is slightly faster than B. The tonguing technique played a herdsman riding on a horse to run quickly. Bar 133 is a parody of a horse's bark. After that, the researcher creates a rising musical mood and ends the work with trill La in five beats and grace La in half beats.



Figure 68 The fragment of section C

Make: Li Xingchen

Advance technique works:

- 1) "Solitary Orchid Greeting the Spring"
- 2) "Little Soldier Bravely Breaking Through the Blockade"

- 1) "Solitary Orchid Greeting the Spring"

"Solitary Orchid Greeting the Spring" was created by Mr. Zhao Songting, the famous Di musical instrument player in China and Mr. Cao Xing. The material is from *Kunqu Opera*. The work was inspired by Premier Zhou Enlai's comment on *Kunqu Opera*: "Kunqu opera is an orchid." The work is based on *kunqu opera* material, through the scenery of orchid, reposes the memory of Premier Zhou. Mr. Zhao Songting once said that *Kunqu opera* emphasizes breath control techniques and flexible fingering techniques. In "Solitary Orchid Greeting the Spring", it is precisely such technical requirements, requirements for breath and timbre, and the technical grasp of finger flexibility and fluency in Allegro.



Figure 69 The fragment of " Solitary Orchid Greeting the Spring"

Make: Li Xingchen

Kunqu opera emphasizes restraint, uplift, pause and frustration. It is this kind of musical feature that makes the phrases strong appeal, and highlights the elegant and tactful characteristics of *Kunqu opera*. Adagio imitates the tonal characteristics of *Kunqu opera* singing, so the performance also fluctuates, highlighting the elegance of the Adagio and richer connotation in music. This work is the fingering of the tube sound as Mi, which has greater difficulty in the semi-hole technique. It is necessary to pay attention to the intonation and the performance of the decorative sound. The player in the half hole on the technical breath control and the use of abdominal vibration have higher requirements. In terms of musical expression, it should also show the characteristics of vocal sentiment, elegant and smooth music. The work is divided into six parts: introduction, adagio, allegro, cadenza, coda, cadenza. Cadenza in the finger trill technique and circular breathing technique on the dazzling and improvisational treatment, will be the whole song to the climax.



Figure 70 The fragment of " Solitary Orchid Greeting the Spring"

Make: Li Xingchen

Such treatment and style not only enrich the connotation of music, but also highlight the colorful art of Di musical instrument, showing the charm of incisively and vividly. Allegro is changed to the commonly used tube tone as the fingering of Sol, cheerful mood, dexterousness and flexibility, in sharp contrast to adagio. The phrasing is regular and lively. The 4 bars of the epilogue end with the trill La in the second hole, which is intense but elegant, warm and solemn.

"*Solitary Orchid Greeting the Spring*" is the works in Mr. Zhao Songting's mature art career. It is not only a systematic and standardized revolution of Di musical instrument, but also a representation of artistic creativity. The researcher is based on tradition, but not restricted by

tradition, and breaks the limitation of playing skills, and combines the playing techniques of the Southern genre and the northern genre in the Di music, so as to serve the performance of new content, so as to emerge a new art form without losing the national style.

2) “A Young Soldier Bravely Breaking Through the Blockade”

“Little Soldier Bravely Breaking Through the Blockade” is a ballad created earlier with realistic techniques. It adopts the theme of Anti-Japanese War to depict and praise the heroic and indomitable image of young soldier in the flames of war, composed by Mr. Chen Dake.

This work is in ^bA mode, which is divided into five sections. Each section has different thoughts and feelings, with great emotional ups and downs, obvious emotional contrast, and many playing techniques and difficulties. Its musical form is as follows in table 13:

Table 12 The musical form of the work

Section	Introduction	A	B	C	D	E
start-stop	1-16	17-101	102-189	190-192	193-206	207-250
bars	16	85	88	3	14	44
Speed (beats/min)	100-120	120	168	Rubato	40	164

Make: Li Xingchen

Introduction

The introduction part is an overview of the battlefield. The prelude is radical and full of tension. It starts with the continuous rhythm of the first eight and the last sixteen and the ascending intensive notes, laying the theme style of the whole song and rendering a tense and rapid battlefield atmosphere filled with smoke.



Figure 71 The fragment of introduction

Make: Li Xingchen

Section A

Section A is the theme of the image of the brave young soldier. It absorbs the music materials of the bouncing folk songs in northeast China, and should be played in jumping, clever and confident way. The first seven degrees of up and down slide and then down slide can be exaggerated. No matter up and down slide, no traces of scale can be revealed in the process of slide. The fingering also means that the belly slides up and away or slides down close to the sound hole and gradually pushes down. With the breath position of the rise and fall, the effect will be more mellow and accurate. In the performance of the “Duo-yin” playing technique, multiple fingers must be pressed simultaneously on the figure holes in the fingering, so as to sound clean and pure. At the end of the performance of the first section, the band followed up with the concert, which had the effect of connecting the preceding and the following, and then the end note fell on b7 , from weak to strong, rendering a tense atmosphere, bringing the music to the first allegro, the speed suddenly increased, and playing according to $\text{♩}=168$ speed.



Figure 72 The fragment of section A

Make: Li Xingchen

Section B

Section B describes the tense scene of the young soldier passing through the enemy blockade line. At the beginning, a series of flutter-tonguing playing techniques are used to raise the mood. When playing, the notes should be played from weak to strong and from slow to fast, with clear and granular notes. Among them, continuous sixteenth notes appear from the 37th bar, depicting the scene of young soldier passing through the enemy's blockade line, rendering the battlefield atmosphere of young soldier jumping on horses and sprinting in the face of danger, which should be played quickly, urgently, nervously and decisively. Section B should be played smoothly and coherently, depicting the whole process of the young soldier breaking into the blockade line incisively and vividly.



Figure 73 The fragment of section B

Make: Li Xingchen

Section C

Section C is the Rubato. It was about a young soldier who was wounded and fell off his horse. When playing, attention should be paid to the coherence of breath and smooth melody. When playing, attention should be paid to the coherence of breath and smooth melody. Exaggerated performance, pay attention to the control of speed, see clearly marked on the score such as "Lento", "Grave", "Rit" and other places, melody lines should be ups and downs, there must be a certain mood inside, can play the real scene of a small soldier injured falling horse on the battlefield.

Section D

Section D is the adagio, played at the speed of $\text{♩}=60$, to be played as passionate as a song, full of singing, slightly heroic color. Beat into duple, slow down, should have singing and

lyricism. This part of the playing techniques is very general, the focus is on the expression of emotion. It depicts the process of a young soldier who was accidentally injured when crossing the enemy's blockade line and fell off his horse. He stood up step by step despite the pain. In this process, he praised and eulogize the heroic behavior of young soldier regardless of personal danger. The use of breath should be strong, and the breath should fill the whole flute body, giving people a full and tension auditory effect. Melody lines do have relaxation, cadence.

Section E

Section E describes the scene of a young soldier who was wounded and mounted his horse and succeeded in breaking through the enemy's blockade. The last section using the rapid tonguing techniques to complete 12 bars in one breath. It's extremely difficult.

The Playing Techniques of Yuping-Xiao musical instrument

There are many similarities between the playing techniques of Xiao and Di. From the perspective of musical expression, the musical expression of Di is far greater than that Xiao. Di can express both cheerful rhythm and lyrical rhythm, but Xiao rarely expresses cheerful rhythm, it is more suitable for lyrical rhythms. To be precise, Xiao is more suitable for expressing sad emotions. Di can play both fast and slow songs while Xiao can just play slow songs. The key of Di is the playing techniques while the key of Xiao is to control the strength of breath. For Di instrument, if there is no playing technique, there is no soul. For Xiao instrument, if there is no lyric, there is no taste. Therefore, compared with Di, the playing techniques of Xiao should be relatively less. The following table 14 shows the commonly used playing symbols of Xiao.

Table 13 Playing symbol of Xiao musical instrument

No.	Name	Mark
1	Breathing techniques	v
2	Stomach Vibrato	~~~~~
3	Single-tonguing	T ▼
4	Double-tonguing	TK ▼▼
5	Upper neighbor tone	又
6	Lower neighbor tone	丁
7	Glide techniques	↪↪
8	"Li-yin"	∧
9	Trill	tr
10	Mordent technique	⚡
11	Appoggiatura	ㄟ
12	"Zeng-yin"	贝

Make: Li Xingchen

The Analysis of Yuping Xiao Musical Instrument Works

Works:

Basic technique works:

1) " a parting tune with a thrice repeated refrain"

" a parting tune with a thrice repeated refrain" was originally a Gu-qin or Gu-xiao music with lyrics from "Weicheng Song", a farewell poem by Wang Wei (702-761) of the Tang Dynasty. The farewell poem is artistically appealing and is performed with the accompaniment of Qin or Xiao musical instrument. This piece has been widely spread from ancient times to the present, and is named after the word "Yang Guan" in the last line of the poem. Because the song repeated the poem three times, it was named " a parting tune with a thrice repeated refrain". The musical form of the first part is an expanded binary. The form is as follows in figure 75:

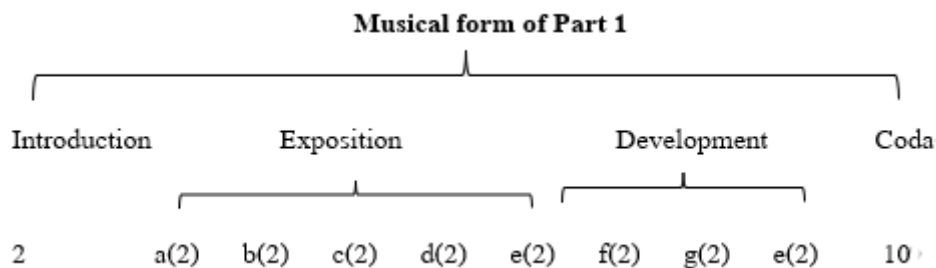


Figure 74 The musical form of "Southern Rhyme"

Make: Li Xingchen

It can be seen from the musical form that the correspondence between lyrics and music is mostly one word and one tone, and the length structure of musical phrases is often referenced by the length of lyrics, which is a major feature of Chinese ancient music. However, in the process of the spread of this song, people often only use the Qin or Xiao musical instrument, gradually make it separated from the song performance form, become a pure instrumental music, so there are some changes in the structure, in the tone also added some new content, so that the music deepened the mood of sorrow from hate expressed in the poetry.

A contemporary Xiao & Di instrumentalist, Mr. Wu Hua, arranges "*a parting tune with a thrice repeated refrain*" based on ancient music. Compared with the ancient song, the Xiao solo work "*a parting tune with a thrice repeated refrain*" not only changes the original rhythm to $\frac{4}{4}$ beats, but also expands the introduction with full charm, which plays a good paving role for the emergence of the theme of the music. Figure 76 is the fragment of "*a parting tune with a thrice repeated refrain*":

Andante espressivo *mf*

4
8
12 *mp cresc.*
15 *dim.* *p*

Figure 75 The fragment of " a parting tune with a thrice repeated refrain"

Make: Li Xingchen

Intermediate technique works:

1) "*Southern Rhyme*"

"*Southern Rhyme*" was created by professor Mr. Zhang Weiliang, the famous Xiao & Di musical instrument player, based on the second section of "*Plum blossom cao*" from *Fujian Nanyin*.

Fujian Nanyin, also known as *Nanqu*, is a kind of traditional, ancient and elegant local music. Therefore, some people call *Nanyin* Oriental classical music, is the living fossil of Chinese classical music. According to the classification of songs. *Nanyin* consists of finger, score and song. Refers to a kind of divertimento with words, music and fingering of pipa; Music is instrumental music; Qu is *Sanqu*. "*Plum blossom cao*" is one of the most famous instrumental pieces in the score. The spectrum of *Nanyin* is good at depicting the scenery of the four seasons, rendering the pleasure of playing and expressing parting feelings. Therefore, spectrum often has the temperament of cultural people, in the style of more elegant, internal pursuit.

"*Southern Rhyme*" consists of three parts: exposition, insertion and recapitulation. Its overall musical form is as follows:

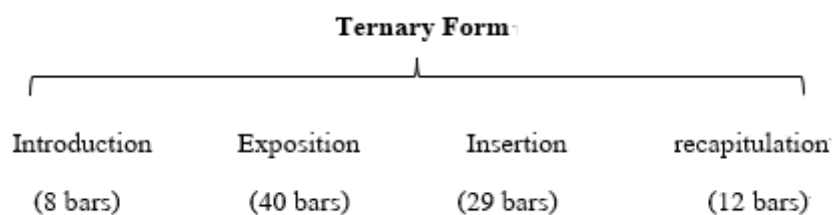


Figure 76 The musical form of "Southern Rhyme"

Make: Li Xingchen

As can be seen from the figure above, the introduction of the work is only eight short bars. However, it plays an important role in shaping the image of music. When the researcher heard the alternating progression from the third to the fifth bars of the introduction of the note Si to the note $^{\#}C$, such a scene always appeared in front of his eyes: the hot summer in the south, the

hot noon sun like fire, everything is quiet. Only an emaciated country maid, leaning against the door frame overlooking the distance, listening to the lonely call of a bird. The emotional depiction of music plays a good role in paving the way for the expression of the feelings of missing relatives far away.

The theme melody of the exposition is mainly progressive. Melodic progression is one of the characteristics of southern sound melodic techniques. It is this technique that creates the profound artistic effect of the theme melody, fully and very measured to express the deep feelings of missing relatives far away.

The insertion part is an allegro, which forms a sharp contrast with the exposition part both in style and in mood. Here with the circular breathing playing techniques, so that the music is full of eager, eager to pursue the effect of strong dynamic, showing that people do not succumb to fate, struggling to fight the fearless spirit.

The structure of the recapitulation section is greatly reduced, but the tonal style is consistent with that of the exposition section. The most intriguing is the closing line of the music, which ends on the D note, as if to ask a question that will never be answered, making people sigh for a long time.

Advance technique works:

1) " Regrets of the Lover Stars"

" Regrets of the Lover Stars" is a Guangdong music piece. The original song is accompanied by lyrics. The song is based on the story of the cowherd and the Weaver maid in the folk tale. It describes the death and separation of lovers and the pain of yearning for love day and night, expressing the feeling of undying love.

The music consists of three sections. The first section is the adagio of grief and anger. The melody is very declarative, with low feelings and sobbing, which fully expresses the melancholy feelings between lovers.

In the second section, the speed remains the same, but the mode is changed from the A mode in the first section to the G mode (Chinese pentatonic mode), thus producing the effect of changing the scene and topic. The mood here is more bitter and angry, which further shows the

sad mood of the lovers who cannot meet each other but are resentful and helpless, and have no way to complain.

In the third section, the style changes greatly, from adagio gradually to Andante, with bright rhythm, exciting emotions and great changes in tonality. This section is quite different from the first two sections in rhythm, style, tonality and mood, showing people's eagerness to pursue a better future.

The work is the musical form of A + B + C, with an introduction. In terms of structural contrast, there is a juxtaposition between section A (part I) and section B (Part II). That is to say, there is no big contrast in musical image between section A and section B. This is mainly because there is no change in the style of the two sections. However, section C (the third part) is different. Due to the use of flowing water board in section C, it forms a sharp contrast with the previous two sections in terms of musical image.

In terms of tonality, this work is a multi-tonality structure. The tonality of section A is bB mode -G mood, and the tonality of section B is C mode -G mode. The tonality of section C is complicated and difficult to judge due to various explanations. Only from the spectrum, it seems that there is no modulation, it is still a C mode, but with an alternation (B7). However, the frequency of the note "Fa" in the clear Angle and its prominent position in the melody seem to be inconsistent with the custom of the rotation of folk music. It can be seen that the palace system of this song is exactly related to the tonic tone, and its modulations have both distant modulations and near modulations. See the following figure 78 of the distribution of tonality:

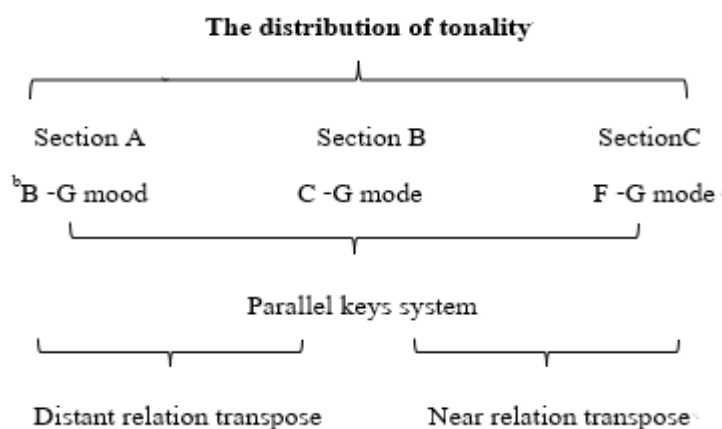


Figure 77 The distribution of tonality

Make: Li Xingchen

In this work, the change of tonality plays a very important role in the contrast of musical images. In particular, it works well with the rhythm contrast. For example, the rhythmic contrast between section A and section B is not large, which is compensated by the distant relationship in tonality. The rhythm contrast between section B and section C is larger, so it is cushioned by a relative tone. This complementarity is illustrated as follows in figure 79:

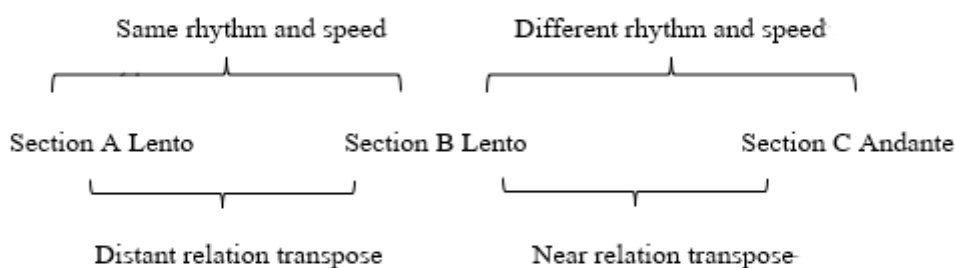


Figure 78 The relationship between tempo and tonality

Make: Li Xingchen

Briefly summarized, this chapter mainly describes the playing techniques of *Yuping Xiaodi*. There are more than 20 commonly used playing techniques for Di, and there are about 15 commonly used playing techniques for Xiao. In order to better describe the playing techniques, the researcher selected 6 works of Di and 3 works of Xiao, including the playing technique level of basic, intermediate and advance.

Chapter VI

Aspects of Change in the Music and Culture of Yuping Xiaodi Musical

Instrument

After hundreds of years of transmission and development, *Yuping Xiaodi* has taken root in the unique and profound local ethnic and folk culture soil, and grown in the harmonious coexistence of ethnic groups and cultural integration of the superior environment. Today, there are some changes in music culture that can be seen and summarized. Of course, the researcher's summary is only limited to what he knows, and there may be more changes in many other aspects. Here, only 6 aspects are elaborated, and the researcher will continue to follow up and update if there are new findings. This chapter is based on literature review and interviews with key informants.

1. The Change of Positioning and Development

Today, *Yuping Xiaodi* has become a Chinese brand and the national pride. Ninety percent of the Xiao & Di products purchased before the 1990s came from *Yuping Xiaodi*. Its positioning is constantly changing in the course of historical development, from initial tributes and gifts to products, works of art, and finally to commodities. The following are the more important ones in its development process.

The craftsmanship of *Yuping Xiaodi* musical instrument began in 1573, It has experienced more than hundreds of years of development, entering the 21st century, it is even more famous and reputation. In 1913, *Yuping Xiaodi* musical instrument won the silver medal at the International Arts and crafts Exhibition held in London, England; In 1915, To celebrate the opening of the Panama Canal, the 1915 Panama Pacific International Exposition was held in San Francisco. As a first-time participant of an international exposition, China made its first public appearance on the world stage and achieved remarkable results in the world. In this grand International Exposition, the Chinese product *Yuping Xiaodi* Musical Instrument won the gold medal; In 1930, the *Yuping Xiaodi* produced by Mr. Zheng Zhishan won the first-class silver prize

at the Guizhou Industrial Exhibition.; In 1947, the Yuping-Xiao made by Mr. Liu Kunshan was awarded a certificate at the Guizhou Products Exhibition.; In 1979, it was awarded the title of high-quality product by the Ministry of Light Industry. At the same time, it has also been rated as a provincial-level high-quality product by the Guizhou Provincial Government; In 1990, Yuping County was awarded the title of "Hometown of Chinese Xiao & Di" by the Ministry of Culture. In 2006, ""*Yuping Xiaodi* Musical Instrument Making Skills" was listed as the first batch of "Intangible Cultural Heritage" protected list by the State Council; In the same year, she was also rated as a famous trademark in Guizhou Province by the Guizhou Provincial Administration for Industry and Commerce; In 2008, The place name trademark of *Yuping Xiaodi* was officially registered by the State Administration for Industry and Commerce; In 2010, *Yuping Xiaodi* Factory was named as the practice base for national music teaching and research by the China Conservatory of Music, *Yuping Xiaodi* Factory has become one of the four designated manufacturers of national musical instruments in China. The *Yuping Xiaodi* made is not only sold nationwide, but also exported to Southeast Asia, Europe and the United States; In 2011, The 4 pairs of *Yuping Xiaodi* made by the key informant Mr. Liu Zesong were collected by the Guizhou Provincial Intangible Cultural Heritage Protection Center.

In 2004, China formally joined the United Nations "Convention for the Protection of Intangible Cultural Heritage". In 2005, the General Office of the State Council issued the "Opinions on Strengthening the Protection of my country's Intangible Cultural Heritage" and the "Notice on Strengthening the Protection of Cultural Heritage". In 2006, the State Council announced "The State-Level Non-Material Cultural Heritage List". "*Yuping Xiaodi* Musical Instrument Making Skills" are listed in the first batch of national intangible cultural heritage list. Since then, *Yuping Xiaodi* musical culture has been protected at the national level and has also received considerable attention.

At the same time, in order to further expand and strengthen the *Yuping Xiaodi* cultural industry, the Yuping County government has increased its support for it, and taking the initiative of "going out and inviting in" and taking the promotion of flute cultural development as the leader. Since 2005, through market-oriented operations, several large-scale publicity and promotion activities have been successfully held, which further enhanced the popularity and influence of *Yuping Xiaodi*.

In November 2005, successfully held the "China, Japan and South Korea International Symposium on Xiao and Di" and the "Dong-ai Cup" Xiao and Di Theatrical Performance;

In 2006, Yuping County and the "Friends of the Xiao & Di instrument" website jointly held the first China Yuping " Friends of the Xiao & Di instrument " Art Festival, and established the Chinese *Yuping Xiaodi* Art School;

In 2007, Yuping County organized a huge lineup of 60 people to Hangzhou city to hold the "*Yuping Xiaodi* Enters Hangzhou" Xiao & Di Cultural Exhibition, signed 9 investment projects, and signed a fund of 215 million;

At the opening ceremony of the 2007 "Jin Yuan Cup" colorful Guizhou tourism products "two competitions and one meeting", the song "*Di Xiang Huan Ge*" played by the *Yuping Xiaodi* Ensemble won the general appreciation of the audience as an important program of the opening ceremony;

In 2009, the "*Yuping Xiaodi* Enters Hong Kong" tourism resource promotion conference and investment promotion activities were successfully held, and the contract capital reached 200 million RMB;

At the Shanghai World Expo that opened in May 2010, *Yuping Xiaodi*, as one of the core exhibits of the Guizhou Pavilion, was introduced to people from all over the world; in mid-September, at the Fifth Guizhou Tourism Industry Development Conference held at the foot of Fanjing Mountain, the wonderful performance of *Yuping Xiaodi* pushed the performance of the conference to a new climax;

In November 2010, the China Yuping Xiaodi Art Festival and the "Kotlin Cup" National Xiao & Di Playing Invitational Competition were successfully held. It not only expands the popularity of Yuping, but also enriches the cultural connotation of *Yuping Xiaodi*.

2. The Change of Policy and Strategy

In order to extend and expand the sustainable development of *Yuping Xiaodi*, with the great attention and support of national, provincial and local leaders, the construction of the three major Xiaodi bases has been continuously strengthened:

- 1) The construction of the Xiao & Di bamboo forest base

In 2008, 20,000 high-quality purple bamboo seedlings were purchased, which are now ready for use. At the same time, special funds are arranged for bamboo seedling planting guarantee every year. After several years of hard work, by 2010, the county has planted more than 10,000 mu of flute bamboo.

2) The construction of Xiao & Di talent base

First of all, introduce professional talents to solve the problem of the shortage of professional flute teachers. In response to the shortage of flute professionals, Yuping County recruited 2 Xiao & Di undergraduates to enrich the Xiao & Di education faculty, and opened a flute professional class in Yuping County Vocational and Technical School to cultivate talents in performance and carving craftsmanship. Secondly, the Xiao & Di performance is included in the teaching curriculum of elementary and middle schools. Xiao & Di classes have been opened in the third to sixth grades of elementary schools in the county and the junior high school stage, and the training of students has been increased. Since 2007, a total of them have been held. The 7 Xiao & Di training courses have trained nearly 600 teachers and music lovers, and trained more than 8,000 students. They have become an important force for displaying and carrying forward the culture of *Yuping Xiaodi*. Third, Yuping County has formulated and introduced a series of measures to further increase the cultivation of Xiao & Di talents. In recent years, Yuping County has successively formulated and issued the "Yuping Regulations on the Protection of the Intangible Cultural Heritage of Yuping County. A series of documents including the Implementation Measures for the Selection and Management of Top Talents in Production and Performance (For Trial Implementation).

Since 2010, it has been selected every three years, each time 10 top Xiao & Di making and performing talents are selected, and they will enjoy a monthly allowance of 500 RMB. Those who have been rated as top Xiao & Di talents for three consecutive times will enjoy life-long treatment. Fourth, increase the intensity of professional knowledge training for bamboo growers, and provide bamboo growers with training on bamboo planting and bamboo seedling post-maintenance management during the implementation of the project.

3) The construction of Xiao & Di production base

The pace of reform and restructuring of *Yuping Xiaodi* Factory has been accelerated, and the production quality and management level of the *Yuping Xiaodi* Factory have reached a new level.

Yuping Xiaodi Factory has become one of the four major national musical instrument manufacturers. The following figure 80 is the brand of *Yuping Xiaodi* factory.



Figure 79 The brand of *Yuping Xiaodi* factory

Photo: Li Xingchen



Figure 80 The production workshop of *Yuping Xiaodi* factory

Photo: Li Xingchen



Figure 81 The model making workshop of *Yuping Xiaodi* factory

Photo: Li Xingchen



Figure 82 The carving workshop of Yuping Xiaodi Factory

Photo: Li Xingchen

In August 2021, the researcher personally visited the *Yuping Xiaodi* Factory during fieldwork. Through an interview with the key informant (The director of *Yuping Xiaodi* Factory), Mr. Wu Jihong, he said that in April of this year, the original *Yuping Xiaodi* Factory was relocated and moved to the new address. At present, the development of *Yuping Xiaodi* Factory has encountered many problems and difficulties. For example, insufficient development funds, insufficient production workers, machines to be updated, single product sales channels, etc.

3. The Change of Business and Marketing

In addition to *Yuping Xiaodi* Factory, a state-owned enterprise, there are also several private enterprises in *Yuping County*. With their flexible management methods, they have gradually occupied a place in the *Xiao & Di* market where competition within and outside the province has become increasingly fierce. Most of the self-employed *Yuping Xiaodi* started in the mid-1980s. The larger ones are mainly: Mr. Liu Zesong founded "Liu Kunshan *Xiao & Di*", Mr. Yao Maofang "*Xiao & Di* family", Ms. Cai Ping "*Yuping Xiaodi*", Mr. Yao Dunyun "*Ziqi Shan Xiaodi*" and other four individual business. At the same time, there are *Guizhou Yuping Zhuyun Xiaodi Musical Instrument Co., Ltd.* (2016) and *Guizhou Yuping Puyun Xiaodi Musical Instrument Co., Ltd.* (2017) which have just been established in recent years. The changes in business methods have made a positive contribution to the diversification of marketing development of *Yuping Xiaodi*.

4. The Change of Craftsmanship and Technique

- 1) Formulate unified production standards

Yuping Xiaodi has been produced for hundreds of years in Yuping County. Before Yuping County officially established the *Yuping Xiaodi* factory at the end of 1955, the production of *Yuping Xiaodi* was made by many private workshops, and there was no uniform production standard to regulate production. And the product is simply one kind of Xiao or one kind of Di. Without unified standard, the products of all Xiao & Di clubs are in their own way, and the products vary from good to bad.

Soon after the establishment of the factory, Mr. Zheng Huizheng, who was born in 1922, served as the factory director. After he and the veterans of flute production reached a consensus on the necessity of formulating Xiao & Di production standards, Mr. Zheng Huizheng went to Beijing to set up. The Chinese Musical Instrument Research Institute soon learned about the national wind music standard system, and the research institute has just issued the Chinese bamboo wind instrument production standard. After further improvement in the early 1960s, the standard was promulgated and implemented by the Ministry of Light Industry, collectively referred to as Quality standards for Xiao & Di production.

On the basis of the Chinese bamboo wind instrument production standards, the older generation of artists based on the production experience accumulated and passed down on the *Yuping Xiaodi* for hundreds of years, and formulated the quality standards for the first *Yuping Xiaodi* production enterprise.

The implementation of the new Xiao & Di craft quality standard has ended the original production model of *Yuping Xiaodi* that has been followed for hundreds of years. The 13-law tuning form derived from the twelve-tone equal temperament has strict regulations on the inner diameter of each different tuning product, the opening distance of the blowing hole and the sound hole, and the diameter of each hole.

These standards are the necessary means to complete and control the tune of Xiao & Di products, and the Xiao & Di products produced under this standard further have the performance function as Musical Instruments. For the production history of Xiao & Di, this is an epoch-making revolutionary progress.

On September 6, 2007, Guizhou Provincial Bureau of Quality and Technical Supervision issued the Local Standard of Guizhou province -- *Yuping Xiaodi*, which detailed the

classification, varieties, specifications, requirements, labeling, packaging, transportation and other contents of Yuping Xiao and Yuping Di.

2) The improvement of model making process

The model making process is the forming process of the *Yuping Xiaodi*. This process is complicated and sequenced. It has gone through the process of selecting materials and cutting materials (divided into Xiao and Di materials), roasting and straightening more than ten processes. These processes basically follow the traditional hand-made methods, and only part of the processes such as jointing, drilling, cutting, etc. use part of the mechanical processing.

Intonation and timbre are the main technical indexes of Musical Instruments, both of which are completed in the model making process. However, as a bamboo wind instrument, the stability of timbre and intonation is always a bottleneck. The *Yuping Xiaodi* is made of bamboo, and the fiber structure and fiber compactness of bamboo are easily affected by climate and humidity and heat, so the intonation and timbre are easy to change. These factors restrict the stability of the intonation and timbre of bamboo flute instruments, and this difficulty is common in all Xiao & Di manufacturers in China.

Shanghai National Musical Instrument Factory, Suzhou National Musical Instrument Factory and Guangzhou Musical Instrument Factory took the lead in the research. According to the physical reasons that bamboo products are susceptible to climate change and humidity and heat change, they proposed to control the intonation and timbre of the products by adjusting them. The effect of this reform is quite obvious and very successful. China has a vast territory, and the geographical climate, temperature and humidity gap between the north and the south is very large. As a result, Xiao & Di products produced in the south cannot be used normally in the north. The regulation function of Xiao & Di products solves this problem.

In order to keep up with the research pace of other musical instrument factories in the quality control, *Yuping Xiaodi* factory sent Mr. Liu Zesong and other makers to Guangzhou musical instrument factory to learn the production technology of regulating Di, the product soon formed mass production, gradually formed the main products in the factory. The change of model making process greatly improves the quality of *Yuping Xiaodi* products.

3) The innovation of production technology

During the fieldwork, the researcher interviewed the key informant Mr. Liu Zesong. The interview question was whether there was any innovation in *Yuping Xiaodi* production in recent years. Mr. Liu Zesong said that his own production has been the use of pure manual traditional production techniques, in the innovation of this aspect of the research is less, but there are innovations. For example, in order to increase the volume of the Di, Mr. Liu Zesong added a pair of sound holes at the end of Di, which can increase the volume of the Di without affecting the intonation. The researcher tried to play this particular Di, and did increase the volume. The following figure 84 and figure 85 are the innovative and improved Di instrument made by Mr. Liu Zesong.



Figure 83 The innovation of of Yuping Di made by keyinformant

Photo: Li Xingchen

We all know that the role of bamboo membrane is to optimize the tone of Di, whether there is a bamboo membrane, or the quality of the bamboo membrane directly affects the tone and quality of the instrument. In order to optimize the tone of the Di, Mr. Liu Zesong made improvements and innovations on it. He added a membrane hole below the original membrane hole in order to change or optimize the tone. The researcher tried to play it, and it was really effective.



Figure 84 The innovation of of Yuping Di made by keyinfomant

Photo: Li Xingchen

Mr. Liu Zesong said that he decided to put these two kinds of Di pioneered by him into the market, depending on the effect, if they are popular, then he will continue to make and put them into production. At the same time, he will continue to experiment with changes in the making process. Such changes must be of great significance to promote the development of *Yuping Xiaodi* products and culture.

5. The Change of transmission and protection

With the acceleration of the modernization process, national musical instruments have been greatly impacted, and the protection and development of Xiao & Di making skills are in a severe situation. At present, *Yuping Xiaodi* making skills are facing the extinct, and there are no successors. There are only 7 people in the *Yuping Xiaodi* factory, including the director and management personnel, and there are fewer than ten old artists engaged in making skills in the urban area. If the making skills are not rescued and protected, this characteristic manual skill will soon disappear in time.

In 2006, Yuping County established the *Yuping Xiaodi* Art School, and hired Mr. Jiang Guoji, Chen Hongyan, Zhou Linsheng and other Xiao & Di performance and production experts as consultants to instruct students to learn how to play and make *Yuping Xiaodi*.

In November 2012, the *Yuping Xiaodi* Museum was officially established. It is an intangible cultural heritage museum. The establishment of the museum promotes the transmission and protection of *Yuping Xiaodi* making skills.



Figure 85 *Yuping Xiaodi* Museum visited in 2021.8.3

Photo: Li Xingchen

6. The Change of Performances and creations

On March 31, 2017, the *Yuping Xiaodi* Orchestra, headed by Professor Tang Junqiao of the Shanghai Conservatory of Music, held a member selection and assessment ceremony. Finally, the judges selected 12 people to become members of *Yuping Xiaodi* orchestra. The purpose of establishing the *Yuping Xiaodi* Orchestra is to promote the culture of *Yuping Xiaodi*, expand the professional team of Xiao & Di, and start the *Yuping Xiaodi* brand. In recent years, the Yuping County Party Committee and government have attached great importance to the cultivation of Xiao & Di professionals. In particular, strengthening the exchange and cooperation with the Shanghai Conservatory of Music is of great and far-reaching significance for further enhancing the talent pool of flute professionals. The *Yuping Xiaodi* Orchestra is now often active on CCTV and international stage, presenting the new cultural image of the "Hometown of Chinese Xiao & Di" to the world, allowing more people to understand *Yuping Xiaodi*, appreciate the unique charm of Xiao & Di culture, and help *Yuping Xiaodi* All-round upgrading of the Xiao & Di industry.

In recent years, many musicians have created some vocal and instrumental works with the theme of *Yuping Xiaodi*. For example, vocal works include: "*Pingxiao Yudii*" composed by Mr. Wang Zezhou, "*Sounds of Xiao and Di*" composed by Tian Yu and Fan Zuojun, The *Yuping Xiaodi* Art Festival Song "*Dragon Xiao and Phoenix Di Finding Friends*" composed by Han Lequn and Deng Chengqun. There are also Xiao & Di works: "*Dongjia folk songs can't finish singing*", "*Folk Song of Miao Minority* ", "*Folk Song Nourishing Township* ", "*Xiao & Di Colorful Show Yuping*" and so on.

In recent years, Yuping County has launched the national culture entering campus activities, formulated practical work plans, and selected 4 junior high schools and 8 central primary schools with strong cultural atmosphere and simple folk customs as demonstration schools for national culture entering campuses throughout the county. In the implementation process, the Xiao & Di culture was built as a key point in the campus, and in August 2011, organized the editing and publication of 1-4 volumes of "Xiao & Di", as a local textbook for primary and secondary schools in Yuping county, Guizhou Province, and was well received by teachers and students. The love of Xiao & Di strongly promoted the development of Xiao & Di culture. The Shanghai Conservatory of Music planned to rewrite the "Xiao & Di" textbook to replace the old textbook in 2011 version.

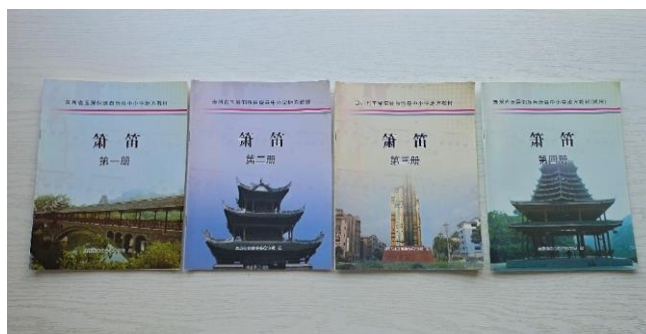


Figure 86 *Yuping Xiaodi* textbook in 2011 version

Photo: Li Xingchen

Briefly summarized, this chapter mainly describes the aspects of change in the music and culture of *Yuping Xiaodi* musical instrument. The music cultural change of *Yuping Xiaodi* are mainly changes in the following aspects: 1) The change of positioning and development 2) The change of policy and strategy 3) The change of business and marketing 4) The change of craftsmanship and technique 5) The change of transmission and protection 6) The change of performances and creations.

Chapter VII

Conclusion, Discussion and Suggestion

This dissertation takes the *Yuping Xiaodi* musical instrument as the research object, and studies making process, playing techniques, and the music cultural change.

CONCLUSION

The making craftsmanship of *Yuping Xiaodi* is divided into four processes, including material selection, model making, carving and finished product. There are many detailed steps in each process. It takes about 26 steps to make, but this is not absolute. Sometimes different product types or different makers will affect the number. This dissertation only studies the production of the most commonly used *Yuping Xiaodi* product category, and the whole process is according to the making steps of the key informant, Mr. Liu Zesong. Of all the steps, material selection and tuning are the most important, which determine the quality of the instrument. Carving is the most difficult, because it needs to be skillfully operated by hand. It can't be done well without decades of effort. Now only the inheritors can complete it well. The quality of each process will ultimately affect the quality of the instrument. Therefore, every process must be made in strict accordance with the standards. So that you can make high-quality instruments. The researcher uses the following table 15 to summarize the conclusions of the first objective:

Table 14 The whole making process and tools of *Yuping Xiaodi*

Processes	Detailed steps	Tools
Materials selecting	1. Species of bamboo	None
	2. Cut bamboo	Sickle
	3. Blanking bamboo	Bamboo sawing machine.
	4. Roast and straighten bamboo	Stove and straightening tools
	5. Storage bamboo	Warehouse

Table 15 (Continued)

Processes	Detailed steps	Tools
Model making	1. Select material	Inner diameter ruler
	2. Blanking bamboo again	Bamboo sawing machine.
	3. Roast and straighten bamboo again	Stove and straightening tools
	4. Get through the inner sections of the bamboo	Taper file
	5. Clean up the inner wall of the bamboo	Round iron bar and brush
	6. Grind off the outside sections of the bamboo	Grinding machine
	7. Scrape off the bamboo skin	Scrape knife
	8. Roast and straighten bamboo for the third time	Stove and straightening tools
	9. Water washing	Brush
	10. Locate sound holes	Straight line box, tuning boxes
	11. Drilling holes	Drilling machine
	12. Install cork	Cork
	13. Adjust the pitch	Hole knife and tonometer
	14. Polishing	Sandpaper
Carving	1. Carving technique	Single-knife and double-knife



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Table 15 (Continued)

Processes	Detailed steps	Tools
Finished product	1. Coloring	Coating and brush
	2. Varnishing	Lacquer and brush
	3. Inlaying	Ornament
	4. Binding wire	Binding wire machine
	5. Checking	Hole knife and tonometer
	6. Packaging	Packing box

Make: Li Xingchen





There are many similarities between the playing techniques of Xiao and Di. In order to better describe the playing techniques, the researcher selected 6 works of Di and 3 works of Xiao, including the playing technique level of basic, intermediate and advance. From the perspective of musical expression, the musical expression of Di is far greater than that Xiao. Di can express both cheerful rhythm and lyrical rhythm, but Xiao rarely expresses cheerful rhythm, it is more suitable for lyrical rhythms. To be precise, Xiao is more suitable for expressing sad emotions. Di can play both fast and slow songs while Xiao can just play slow songs. The key of Di is the playing techniques while the key of Xiao is to control the strength of breath. For Di instrument, if there is no playing technique, there is no soul. For Xiao instrument, if there is no lyric, there is no taste. Therefore, compared with Di, the playing techniques of Xiao should be relatively less. There are more than 20 commonly used playing techniques for Di, and there are about 15 commonly used playing techniques for Xiao. The following two tables are the playing techniques of Di musical instrument and the playing techniques of Xiao musical instrument.

Table 15 The playing symbol of Di musical instrument

No.	Name	Mark	No	Name	Mark
1	Breathing techniques	v	11	Appoggiatura	ㄣㄛ
2	Single-tonguing	T ▼	12	Upper neighbor tone	又
3	Double-tonguing	TK ▼▼	13	Lower neighbor tone	丁
4	Triple-tonguing	TTK TKT	14	Zeng-yin	贝
5	Flutter-tonguing	*	15	Circular breathing	⊙
6	Glide techniques		16	Flying finger	飞
7	"Duo-yin"		17	Overtone	○
8	"Li-yin"		18	Throat sound	⊗
9	Trill	tr	19	Stomach Vibrato	
10	Mordent technique		20	Knead sound	U

Make: Li Xingchen

Table 16 The playing symbol of Xiao musical instrument

No.	Name	Mark	No.	Name	Mark
1	Breathing techniques	v	7	Glide techniques	
2	Stomach Vibrato		8	"Li-yin"	
3	Single-tonguing	T ▼	9	Trill	tr
4	Double-tonguing	TK ▼	10	Mordent technique	
5	Upper neighbor tone	又	11	Appoggiatura	ㄣㄛ
6	Lower neighbor tone	丁	12	"Zeng-yin"	贝

Make: Li Xingchen

The music cultural change of *Yuping Xiaodi* are mainly changes in the following aspects: 1) The change of positioning and development 2) The change of policy and strategy 3) The change of business and marketing 4) The change of craftsmanship and technique 5) The change of transmission and protection 6) The change of performances and creations. The table below summarizes the music culture changes of *Yuping Xiaodi* musical instrument in aspects and the timeline of the changes.

Table 17 The playing symbol of Xiao musical instrument

No.	Aspects of change	Timeline
1	Positioning and Development	1573~2010
2	Policy and Strategy	2008~2021
3	Business and Marketing	Mid-1980s~2017
4	Craftsmanship and Technique	2007~2019
5	transmission and protection	2006~2021
6	Performances and creations	2011~2021

Make: Li Xingchen

DISCUSSION

1. The making process of *Yuping Xiaodi* Musical Instrument

The researcher obtained the relevant data through investigation. The data were mainly collected with observation, interview, audio and video recording from fieldwork with the key informants. The researcher watched the whole process of making *Yuping Xiaodi* from the key informant Mr. Liu Zesong and Mr. Wu Jihong. In the process, the researcher is also learning how to make *Yuping Xiaodi* musical instrument. In order to achieve the purpose of learning and applying, the researcher tries to make Xiao and Di by himself. Limited by a series of objective conditions, such as no raw materials (bamboo), no production machines, etc., the researcher used the simple raw materials and household tools.

The raw material is ordinary household PVC pipes instead of bamboo. The tools are shown in figure 88, from left to right, a hole punch, a hole cutter, a marker pen, a water pipe cutter, and a tape measure. The researcher will use these materials and tools to make a simple Di.



Figure 87 The materials and tools used to make Di

Make: Li Xingchen

After measurement, the inner diameter of the PVC pipe is 15mm, which is suitable for Di in E tone (the relationship between the inner diameter and tone has been described in detail in the previous section). Di instruments are tuned with the third finger hole as "do" to check their intonation. Note: When measuring the distance between holes: 1) The distance between holes must be measured from the center of each hole, not from the edge of the hole. 2) All dimensions are in millimeters, like 15 mm. The table 19 below shows the specific data of self-made Di. Figure 89 is the finished product. Figure 90 is the detailed marking. Table 20 is the commonly used fingering.

Table 18 The detail data of self-made Di

The Key	Inner diameter	Length of pipe	Blow hole to finger hole 1	To finger hole 2	To finger hole 3	To finger hole 4	To finger hole 5	To finger hole 6	To Film hole
E	15	415	265	235	216	187	167	145	75

Make: Li Xingchen



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Figure 88 Finished product

Photo: Li Xingchen

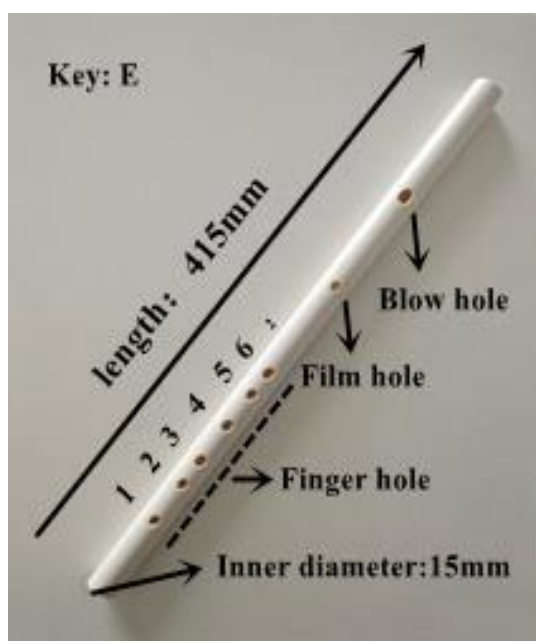


Figure 89 Detailed marking

Photo: Li Xingchen

Table 19 Commonly used fingering (Closed all finger holes= g)

Fingering	Pitch name	Syllable name	Notation
⑥ ⑤ ④ ③ ② ①	g	Sol	5̇
● ● ● ● ● ○	a	La	6̇
● ● ● ● ○ ○	b	Si	7̇
● ● ● ○ ○ ○	c ¹	Do	1̇
● ● ○ ○ ○ ○	d ¹	Re	2̇
● ○ ○ ○ ○ ○	e ¹	Mi	3̇
○ ● ● ○ ○ ○	f ¹	Fa	4̇
○ ● ● ● ● ●	g ¹	Sol	5̇
● ● ● ● ● ○	a ¹	La	6̇
● ● ● ● ○ ○	b ¹	Si	7̇
● ● ● ○ ○ ○	c ²	Do	1̇
● ● ○ ○ ○ ○	d ²	Re	2̇
● ○ ○ ○ ○ ○	e ²	Mi	3̇
○ ● ● ● ● ○	f ²	Fa	4̇
○ ● ● ● ● ●	g ²	Sol	5̇
● ● ○ ● ● ○	a ²	La	6̇
● ○ ● ● ● ●	b ²	Si	7̇
● ○ ● ○ ○ ●	c ³	Do	1̇

Note: ● = Closed finger hole ○ = Open finger hole

Make: Li Xingchen

Product parameters of Di musical instrument (PVC pipe)

Brand: Li Xingchen

Material: PVC water pipe

Origin: Guizhou Province

Category: E tone

Application scenario: practice, performance, not suitable for professional performance.

Suitable for: beginners, children, students.

After making the Di, 7.8cm of waste PVC pipe material was left. The researcher made a Mini Di for 2-year-old daughter by using this material. This Mini Di can play children's songs and simple songs. The daughter extremely loved it. Figure 91 is the raw materials and tools, figure 92 is the Mini Di.



Figure 90 Materials and tools

Photo: Li Xingchen



Figure 91 Finished Mini Di

Photo: Li Xingchen

The making process of Xiao is similar to that of Di. Table 21 is the specific data of making Xiao, and figure 93 is the Xiao made by the researcher according to the data in table 21.

Table 20 The detail data of Xiao

The Key	Inner diameter	Length of pipe	Blow hole to finger hole 1	To finger hole 2	To finger hole 3	To finger hole 4	To finger hole 5	To finger hole 6	To Film hole
G	18	65	44.5	42.5	39.5	37	31.5	29.7	27.5

Make: Li Xingchen



Figure 92 The home-made Xiao musical instrument

Make: Li Xingchen

Product parameters of Xiao musical instrument (PVC pipe)

Brand: Li Xingchen

Material: PVC water pipe

Origin: Guizhou Province

Category: G tone

Application scenario: practice, performance, not suitable for professional performance.

Suitable for: beginners, children, students.

The researcher makes personal evaluation on the self-made Xiao and Di:

- 1) The intonation basically meets the standard requirements.
- 2) The volume is moderate, are almost the same as the Xiao and Di made of bamboo.
- 3) The timbre is very good.
- 4) The shape is complete and the feel is good.
- 5) The researcher has a great use experience.

2. The playing techniques of *Yuping Xiaodi* Musical Instrument

The researchers have been learning the Di & Xiao instrument for nearly 20 years, and have gone through such a learning process from elementary to intermediate, and finally to advanced. Regarding playing techniques, the researcher believe that the most difficult part is the mastery of basic techniques. The performance of any piece of music, if you want to play very

well, must be supported by basic techniques. Therefore, in the process of learning this musical instrument, the researcher has been in touch with the basic techniques for the first three years.

Among all the playing techniques, the most difficult one is recognized by everyone, that is, the techniques of cyclic ventilation and cyclic double accent. It also took researchers a long time to master it. It's arguably the hardest of all techniques. This technique can make a sound loop indefinitely, and the breath will not be disconnected during the blowing process, giving the illusion that the player can blow for a long time in one breath. If you want to master it, you need not only to think about the principle but also to practice hard day after day.

Among the playing techniques of Di and Xiao, the technique of fingering cannot be ignored. There are usually 5 different fingerings, the most commonly used and elementary fingering is G fingering (Closed all finger holes = g). Intermediate fingerings are D fingering (Closed all finger holes= d) and C fingering (Closed all finger holes= c). The advanced fingerings are A fingering (Closed all finger holes= a) and E fingering (Closed all finger holes= e). If you can play a piece with one instrument and use 5 different fingerings, that means you are very good level.

Of course, it is not enough to only focus on playing techniques when performing a piece of work. What's more important is the understanding of music. How to use the most appropriate emotion to interpret musical works can also be regarded as a difficult technical problem. This requires certain musical literacy. Musical literacy depends on accumulated experience.

3. The aspects of change in the music and culture of *Yuping Xiaodi* Musical Instrument.

Some discussions on the change and development of *Yuping Xiaodi* culture.

1. Regulate the market and cultivate talents

1) Establish industry associations and standardize industry standards. In order to promote the transmission and development of *Yuping Xiaodi*, it is necessary to build industry associations, so as to unite people, standardize industry standards, fully mobilize the enthusiasm of the majority of craftsmen, and promote the formation of a good competitive force in the industry, so that *Yuping Xiaodi* crafts More refined, the corresponding brand is also more influential. Strictly put an end to bad behaviors such as dishonest management, and require

practitioners to have a qualification certificate. At present, the *Yuping Xiaodi*, industry has a very extensive relationship between master and apprentice in the course of its operation, and the interaction mode between them has certain organizational characteristics. Through the construction of industry associations, many management problems existing in the industry can be effectively solved, the occurrence of bad operations can be reduced, and a series of social problems can be effectively avoided. (Zhang Lingling, 2021)

2) Strengthen personnel training and promote cultural inheritance

Promoting the transmission of the *Yuping Xiaodi* industry will inevitably be inseparable from all kinds of outstanding talents. The development of the cultural industry not only needs to have talents for transmission and production who master excellent skills, but also needs professional managers and cultural researchers. At present, there is an irrational age structure of talents engaged in *Yuping Xiaodi* industry. There is a serious gap among young people, and there is a shortage of professional talents who know how to manage. Therefore, in the actual operation process, on the one hand, it is necessary to strengthen the training of *Yuping Xiaodi* manufacturing skills, through publicity and teaching, continue to cultivate more master-level figures, create more production skill teams, and continue to transmit the *Yuping Xiaodi* industry. Encourage the older generation to continue to recruit disciples, further improve the apprenticeship system, and appropriately increase apprentice salaries. At the same time, we should also pay attention to the folk craftsmen, and provide opportunities for more craftsmen through the promulgation of a series of preferential policies and regulations. On the one hand, it is necessary to intensify the census of civilian employees, especially those who are willing to specialize in the production of *Yuping Xiaodi*, and provide them with more development platforms and provide them with more development convenience. On the other hand, it is necessary to increase the training and introduction of management talents, combine the current problems and deficiencies in the development of the *Yuping Xiaodi* industry, improve the salary of management talents, and attract more professional managers to apply. Actively introduce some talents who understand network management and e-commerce, continuously expand the *Yuping Xiaodi* industry, promote handicrafts to all parts of the world, and form a complete industrial chain.

2. Integrate the market and improve the system

To promote the continuous expansion and strength of the *Yuping Xiaodi* industry, a complete industrial chain must be built. A complete industrial chain includes an orderly market environment, a complete industrial cluster, a diversified industrial structure, the development of derivative products, and the highlighting of cultural creativity. Based on this, the *Yuping Xiaodi* industry can start from the above points, make breakthroughs one by one, form a complete agglomeration effect, fully integrate various resources in the market, continuously strengthen its core competitiveness, and form a stronger brand influence.

1) Integrate the sales market and adjust the industrial layout

Judging from the current development status of the *Yuping Xiaodi* industry, there is a situation of scattered manpower and funds, and the scale of operating enterprises is generally small, without good cohesion, the corresponding industrial structure is very simple, and the development of derivative products is not good enough. Cultural creativity is outdated and single. From the perspective of long-term development, these factors have greatly affected the development of the *Yuping Xiaodi* market. Based on this, the *Yuping Xiaodi* industry must rely on the support of national policies and local government policies. Opportunities for the organization and development of industry associations, re-planning and integration of the *Yuping Xiaodi* market, formulating phased development goals, and building concentrated contiguous sales areas around the current key operating provinces. At the same time, promote the joint interaction between the *Yuping Xiaodi* industry and other industries, strengthen the exchange and linkage between various industries, reduce the narrow selection of sales objects, and further expand the sales market. Most operators in the *Yuping Xiaodi* industry have problems with outdated concepts and short-sightedness. They only want to obtain more economic benefits, but ignore the problems.

Innovation of business model, cultural heritage and brand building. Therefore, it is necessary for the government to take the lead in making a series of market plans to promote the coordinated strategy of strategic industry leadership and related industry assistance, strengthen mutual assistance between various industries, and promote the development of the *Yuping Xiaodi* industry.

2) Research and develop new products to expand brand influence

The single product type of *Yuping Xiaodi* is also a reason that restricts the growth of the cultural industry. Specifically, although the handicraft has a certain cultural background, it lacks strength in the development of high-end products and the research and development of creative products. Based on this, the *Yuping Xiaodi* industry must strengthen the ability to independently research and develop products, increase capital and equipment investment, and build a dedicated product research and development department. The introduction of professionals and the creation of a team of experts have made the development of the *Yuping Xiaodi* industry more possibilities. At the same time, it is necessary not only to develop creative products, but also to strengthen the influence of product brands, strengthen brand effects, and improve the shortcomings in the brand building process. Individual operators are weak in registration awareness and brand building awareness is not strong. It is the key to increase the importance of business operators to trademarks. Pay attention to the original protection of *Yuping Xiaodi* culture. On the one hand, it is necessary to increase the popularity of *Yuping Xiaodi*. Through the promotion of various new media, the industrial culture of *Yuping Xiaodi* will be explained on Douyin (Tik Tok) and Weibo application to promote the unique nation. Art resources stimulate more consumer groups. On the other hand, it is necessary to attract more innovative artistic talents and hire them to create and develop more derivative products for *Yuping Xiaodi*, and make the products more high-end and diversified.

3. Implement funding policies and focus on cultural promotion

1) Implement funding and fiscal policies

In conjunction with the national government's relevant policies and regulations on the transmission and protection of ethnic handicrafts, actively adjust financial means to increase important support for the development of the *Yuping Xiaodi* industry. Due to the small scale of the *Yuping Xiaodi* industry, the scattered funds, and the limited financial resources of the local government, it is necessary to relax the market access system, mobilize social forces, and attract more foreign capital. Actively encourage local enterprises to participate in financing through intellectual property rights to form a benign financial environment within the industry. The national government should appropriately adjust taxation policies, give certain preferential treatment to the transmission of minority handicrafts, and reduce the corresponding proportion of

taxation. In addition, local financial institutions can appropriately relax the loan and loan policies for *Yuping Xiaodi* enterprises, and gradually apply the cultural industry investment and insurance system, thereby forming the greatest support for the *Yuping Xiaodi* industry. In response to problems such as the weakening of the functions of individual operating companies, the local government can also provide targeted assistance and help companies tide over the difficulties through a series of assistance measures.

2) Strengthen cultural propaganda and guidance

Local government departments should conduct a comprehensive and in-depth survey of the *Yuping Xiaodi* industry, actively collect relevant data, build a special database, and modify and improve cultural promotion policies based on this, so as to effectively solve different problems in current cultural promotion. At the same time, the local government must do preventive work such as government evaluation, and set up a special supervision department to conduct comprehensive supervision and supervision of the *Yuping Xiaodi* industry. Facing the changes in the modern marketing environment, *Yuping Xiaodi* Industry must actively apply information technology and implement integrated online and offline sales. In view of the financial risks in the operation process, the use of big data technology for mining and integration, and the probability of risk occurrence continuously reduce and take timely countermeasures to stifle the risk in the bud. Improve the sales network, open stores across the country, and let more people collect fine flutes through online sales and mailing. You can also entrust travel companies to sell to famous scenic spots across the country to gain more market share.

Throughout the hundreds of years of history of *Yuping Xiaodi*, with its unique artistic appeal, it occupies a place in many arts, and it is not easy to have such a high reputation at home and abroad. All this is attributed to generations of *Yuping Xiaodi*. With our wisdom and tireless exploration, the researcher also fortunate to contribute my meager efforts to the development of *Yuping Xiaodi*. Wish *Yuping Xiaodi* will always be glorious.

SUGGESTION

1. Suggestions for further research

1.1 In this research, the researcher separately studied the making process, playing techniques, and music cultural changes of *Yuping Xiaodi* musical instrument. I hope that

subsequent researchers will continue to study the history, craftsmanship, transmission and protection of *Yuping Xiaodi*. In order to transmit and carry forward the *Yuping Xiaodi* culture and form a real influential Chinese brand.

1.2 Should be study the craftsmanship of Xiao & Di instrument in other areas for comparison.

1.3 Should be study and analyze the characteristics of performances and special techniques.

1.4 Should be study the roles and functions of *Yuping xiaodi* instrument in society.

2. Suggestions for applying the results of the study

2.1 The research results of this dissertation can be used for those who are interested in how to make *Yuping Xiaodi* instrument in Guizhou province, and can also be used as a reference material for students or teachers who want to learn *Yuping Xiaodi* in Guizhou province.

2.2 Local libraries, archives or cultural centers in Yuping County can use the results of this study as archival materials for the preservation, transmission, development and utilization of local culture.

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APPENDIX

Appendix A: Interview record of fieldwork.

1. Time

February 2021 to August 2021

2. Location

Yuping County, Guizhou Province, China.

3. Interviewees

1) Mr. Wu Jihong, 55 years old, instrument maker, inheritor, factory director.

2) Mr. Liu Zesong, 79 years old, instrument maker, inheritor.

Table 22 Interview record of fieldwork

Question	Result
1) How many manufacturers are engaged in Xiaodi production in Yuping County?	About eight to ten.
2) How many orders per month? Take <i>Yuping Xiaodi</i> manufactory as an example.	About 100 orders.
3) How many makers are there in <i>Yuping Xiaodi</i> manufactory?	Six.
4) What is the biggest problem in the production?	Backward technology and lack of raw materials.
5) What qualities and capability should a qualified Xiaodi maker have?	Production and performance technology.
6) Is there any innovation and new variety in the production of <i>Yuping Xiaodi</i> ?	Yes.
7) How many making tools are there? What are they?	Tools are used in almost every step of the process.
Question	Result



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8) How many procedures in the production process of <i>Yuping Xiaodi</i> ?	1) Material selection 2) Model making 3) Carving 4) Finished product
9) What is the most difficult process?	Carving is the most difficult, because it needs to be skillfully operated by hand. It can't be done well without decades of effort. Now only the inheritors can complete it well.
10) What is the most important process?	Of all the steps, material selection and tuning are the most important, which determine the quality of the instrument.
11) How to choose raw materials? What are the selection criteria?	The general criteria for choosing bamboo materials are two aspects. One is to identify the growth age of bamboo. Generally speaking, 5-6 years old bamboo is the most suitable for making Xiao & Di instrument. The other is to identify the shape, it mainly depends on the roundness of the bamboo. It is better to use a bamboo with a round body, uniform thickness and appropriate spacing between the bamboo sections.
12) What are the requirements for bamboo in the selection of materials?	The most commonly used bamboo materials for making Yuping Di are water bamboo, bitter bamboo, purple bamboo, and golden bamboo. The most commonly used bamboo materials for making Yuping Xiao are water bamboo and purple bamboo.
Question	Result

<p>13) What are the dimensions required to make Xiaodi with different keys?</p>	<p>Xiao and Di that make different keys have different inner diameter. 1) Yuping-Di: C:17-18mm, D:16-17mm, E:15-16mm, F:14-15mm, G:13-14mm, A:12-13mm. 2) Yuping-Xiao: G:18-19mm, F:19-20mm, E:20-21mm, D:21-22mm, C:22-23mm.</p>
<p>14) How to drill holes? How to find the location of each hole?</p>	<p>1) To take an ideal Xiao or Di instrument that has been made as a model and reference. Based on the length data of the instrument, mark the position of each sound hole on the new instrument with a marker. 2) To use molds, which is a traditional and simple method. 3) To use the percentage calculation method to determine the position of each sound hole.</p>
<p>15) What common patterns are found in the composition of the carving process?</p>	<p>The original carvings were only ancient poems on <i>Yuping Xiaodi</i> bamboo pipes, and later evolved into dragons, phoenixes, flowers, birds, insects, fish, landscapes and other patterns. The carved patterns also add a strong cultural connotation to the <i>Yuping Xiaodi</i>, which has deeply won the love of players, fans and collectors.</p>
<p>16) What are the carving tools? What are the names? What are the roles?</p>	<p>The tools used in the engraving process are: single-knife and double-knife, single-knife lettering, and double-knife carving patterns.</p>
<p style="text-align: center;">Question</p>	<p style="text-align: center;">Result</p>

<p>18) What standard does <i>Yuping Xiaodi</i> use to set its tone?</p>	<p>Use international Standard tone a¹ – la – 440 Hz. c¹ – do – 261.6 Hz, d¹ – re – 293.6 Hz, e¹ – mi – 329.6 Hz, f¹ – fa – 349.2 Hz, g¹ – sol – 392 Hz, a¹ – la – 440 Hz, b¹ – si – 493.8 Hz.</p>
<p>19) In what aspects does the music culture change of <i>Yuping Xiaodi</i> reflect?</p>	<p>1) The change of positioning and development. 2) The change of policy and strategy. 3) The change of business and marketing. 4) The change of craftsmanship and technique. 5) The change of transmission and protection. 6) The change of performances and creations.</p>
<p>20) Are there any new musical works about <i>Yuping Xiaodi</i>?</p>	<p>Vocal works include: "<i>Pingxiao Yudii</i>" composed by Mr. Wang Zezhou, "<i>Sounds of Xiao and Di</i>" composed by Tian Yu. The <i>Yuping Xiaodi</i> Art Festival Song "<i>Dragon Xiao and Phoenix Di Finding Friends</i>" composed by Han Lequn. There are also Xiao & Di works: "<i>Dongjia folk songs can't finish singing</i>", "<i>Folk Song of Miao Minority</i> ", "<i>Folk Song Nourishing Township</i> ", "<i>Xiao & Di Colorful Show</i></p>

Make: Li Xingchen

Appendix B: Chinese musical notation from Chapter 5 of Analysis of works.

[Part one: Yuping - Di]

Basic technique works:

- 1) *"Five Clappers"*
- 2) *"Journey to Gusu "*

Intermediate technique works:

- 1) *"Qinchuan Feelings"*
- 2) *"New Song of Herdsmen"*

Advance technique works:

- 1) *"Solitary Orchid Greeting the Spring"*
- 2) *"Little Soldier Bravely Breaking Through the Blockade"*

[Part two: Yuping - Xiao]

Basic technique works:

"a parting tune with a thrice repeated refrain"

Intermediate technique works:

"Southern Rhyme"

Advance technique works:

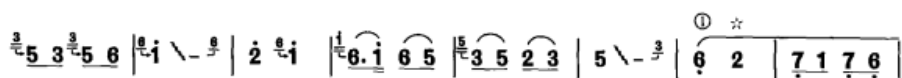
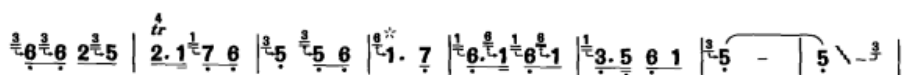
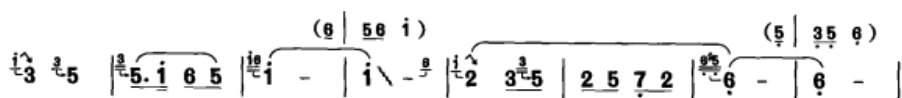
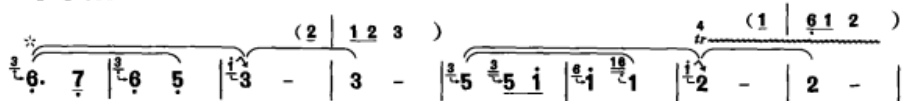
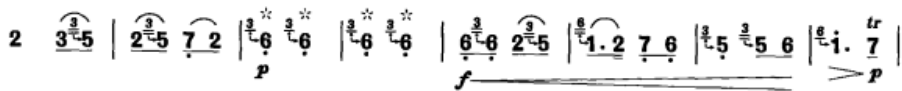
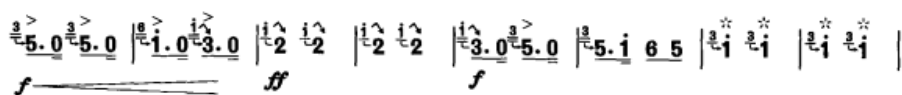
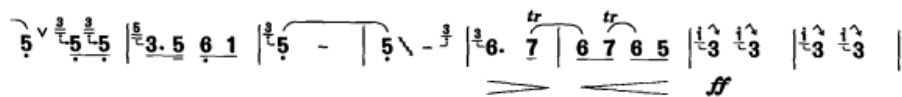
"Regrets of the Lover Stars"



289274180

MSU eThesis 62012060013 thesis / recv: 22032565 20:03:01 / seq: 22

五 梆 子

1 = C (DG调梆笛 全按作2) $\frac{2}{4}$ 冯子存编曲
霍 伟记谱【I】慢板 $\text{♩} = 58-80$ 【II】稍快 强而有力地 $\text{♩} = 80-104$ 

$\overset{5}{\underline{3.5}} \underline{2 \ 3} \mid \overset{3}{\underline{5}} \setminus - \overset{3}{\underline{3}} \mid \overset{3}{\underline{6}} \dot{2} \mid \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{6}} \mid \overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{i}} \mid \overset{5}{\underline{3.5}} \widehat{6 \ i} \mid \overbrace{5 \ -} \mid \overset{5}{\underline{5}} \setminus - \overset{3}{\underline{3}} \mid$

【III】快 清脆 $\text{♩} = 104$

$\overset{3}{\underline{6. \ 7}} \mid \overset{tr}{\underline{6 \ 7 \ 6 \ 5}} \mid \overset{p}{\underline{3 \ 3 \ 3} \ \underline{3 \ 3 \ 3}} \mid \overset{f}{\underline{3 \ 3 \ 3} \ \underline{3 \ 3 \ 3}} \mid \overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{5}} \mid \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{3}} \overset{\circ}{\underline{5}} \mid \overset{p}{\underline{2 \ 2 \ 2} \ \underline{2 \ 2 \ 2}} \mid \overset{p}{\underline{2 \ 2 \ 2} \ \underline{2 \ 2 \ 2}} \mid$

$\overset{tr}{\underline{3.0}} \overset{3}{\underline{5.0}} \overset{3}{\underline{5.0}} \mid \overset{\circ}{\underline{5. \ i}} \overset{\circ}{\underline{6 \ 5}} \mid \overset{\circ}{\underline{6 \ i \ 6 \ i}} \overset{\circ}{\underline{6 \ i \ 6 \ i}} \mid \overset{\circ}{\underline{6 \ i \ 6 \ i}} \overset{\circ}{\underline{6 \ i \ 6 \ i}} \mid \overset{tr}{\underline{2}} \overset{3}{\underline{5}} \mid \overset{tr}{\underline{2 \ 5 \ 7 \ 2}} \mid \overset{\circ}{\underline{6 \ 6 \ 6}} \overset{\circ}{\underline{6 \ 6 \ 6}} \mid \overset{\circ}{\underline{6 \ 6 \ 6}} \overset{\circ}{\underline{6 \ 6 \ 6}} \mid$

$\overset{3}{\underline{6}} \ \overset{3}{\underline{2}} \overset{3}{\underline{5}} \mid \overset{\circ}{\underline{1. \ 2}} \ \overset{3}{\underline{7 \ 6}} \mid \overset{\circ}{\underline{5}} \overset{\circ}{\underline{5}} \overset{\circ}{\underline{6}} \overset{\circ}{\underline{6}} \mid \overset{tr}{\underline{6. \ 7}} \mid \overset{\circ}{\underline{6}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{6}} \overset{\circ}{\underline{i}} \mid \overset{\circ}{\underline{6}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{6}} \overset{\circ}{\underline{i}} \mid \overset{\circ}{\underline{5 \ i \ i}} \ \overset{\circ}{\underline{5 \ i \ i}} \mid \overset{\circ}{\underline{5 \ i \ i}} \ \overset{\circ}{\underline{5 \ i \ i}} \mid$

$\overset{\circ}{\underline{5 \ i \ i}} \ \overset{\circ}{\underline{5 \ 6 \ 6}} \mid \overset{\circ}{\underline{i}} \setminus - \overset{\circ}{\underline{3}} \mid \overset{\circ}{\underline{2}} \overset{\circ}{\underline{i}} \mid \overset{\circ}{\underline{6}} \overset{\circ}{\underline{i}} \ \overset{3}{\underline{6 \ 5}} \mid \overset{5}{\underline{3.5}} \ \overset{3}{\underline{2 \ 3}} \mid \overset{5}{\underline{5}} \setminus - \overset{3}{\underline{3}} \mid \overset{3}{\underline{6}} \overset{3}{\underline{6}} \ \overset{3}{\underline{2 \ 2}} \mid \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{i}} \overset{\circ}{\underline{6}} \mid$

【IV】热情奔放 $\text{♩} = 112$

$\overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{5}} \overset{3}{\underline{i}} \mid \overset{tr}{\underline{3.5}} \widehat{6 \ i} \mid \overset{3}{\underline{5}} - \mid \overset{5}{\underline{5}} \setminus - \overset{3}{\underline{3}} \mid \overset{tr}{\underline{6}} - \mid \overset{tr}{\underline{6}} - \mid \overset{tr}{\underline{3}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{3}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{3}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{3}} \overset{tr}{\underline{i}} \mid$

$\overset{tr}{\underline{3 \ 5 \ 3 \ 5}} \mid \overset{tr}{\underline{3 \ 5 \ 3 \ 5}} \mid \overset{tr}{\underline{3 \ 5 \ 3 \ 5}} \mid \overset{tr}{\underline{2 \ i}} \overset{tr}{\underline{2 \ i}} \mid \overset{tr}{\underline{2 \ i}} \overset{tr}{\underline{2 \ i}} \mid \overset{tr}{\underline{3 \ 5 \ 3 \ 5}} \mid \overset{tr}{\underline{3 \ 5 \ 3 \ 5}} \mid \overset{tr}{\underline{3 \ 5 \ 3 \ 2}} \mid \overset{tr}{\underline{6}} - \mid \overset{tr}{\underline{6}} - \mid$

$\overset{tr}{\underline{2}} \ \overset{tr}{\underline{3.5}} \mid \overset{tr}{\underline{2 \ 3 \ 7 \ 2}} \mid \overset{tr}{\underline{6 \ 6 \ 6}} \overset{tr}{\underline{6 \ 6 \ 6}} \mid \overset{tr}{\underline{6 \ 6 \ 6}} \overset{tr}{\underline{6 \ 6 \ 6}} \mid \overset{tr}{\underline{6}} \ \overset{tr}{\underline{2}} \mid \overset{tr}{\underline{2}} \ \overset{tr}{\underline{6}} \mid \overset{tr}{\underline{3.5}} \overset{tr}{\underline{5.5}} \overset{tr}{\underline{5.5}} \overset{tr}{\underline{6}} \mid \overset{tr}{\underline{i}} \overset{tr}{\underline{i}} \overset{tr}{\underline{i}} \overset{tr}{\underline{i}} \mid$

$\overset{tr}{\underline{6}} \overset{tr}{\underline{i}} \overset{tr}{\underline{6}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{6}} \overset{tr}{\underline{i}} \overset{tr}{\underline{6}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{5 \ i \ i}} \ \overset{tr}{\underline{5 \ i \ i}} \mid \overset{tr}{\underline{5 \ i \ i}} \ \overset{tr}{\underline{5 \ i \ i}} \mid \overset{tr}{\underline{5 \ i \ i}} \ \overset{tr}{\underline{5 \ 6}} \mid \overset{tr}{\underline{i}} \setminus - \overset{tr}{\underline{3}} \mid \overset{tr}{\underline{2}} \overset{tr}{\underline{i}} \mid \overset{tr}{\underline{6. \ i}} \ \overset{tr}{\underline{6 \ 5}} \mid$

渐慢

$\overset{3}{\underline{3.5}} \ \overset{3}{\underline{2 \ 3}} \mid \overset{tr}{\underline{5}} \ \overset{\circ}{\underline{0}} \mid \overset{3}{\underline{6}} \ \overset{3}{\underline{2}} \mid \overset{\circ}{\underline{i}} \ \overset{\circ}{\underline{i}} \overset{\circ}{\underline{6}} \mid \overset{3}{\underline{5}} \ \overset{3}{\underline{5}} \overset{3}{\underline{i}} \mid \overset{3}{\underline{3.5}} \ \overset{3}{\underline{6 \ i}} \mid \overbrace{5 \ -} \mid \overset{5}{\underline{5}} \setminus - \overset{3}{\underline{3}} \parallel$

演奏提示:《五梆子》原为华北地区流行的一首曲牌《碰梆子》，曲调优美明快。改编后，乐曲又增添了粗犷豪爽、热情奔放的气质。

乐曲第二至四段是第一段主题的变奏。【一】慢板，曲调优美委婉如歌，具有洒脱的语言化特点和北方人民豪爽乐观的性格特征。【二】明快有力又诙谐风趣。【三】轻快流利、欢欣活泼。【四】热情奔放。

演奏宜粗犷中见细腻，热情里含深蕴。第四段“1”音上的飞指奏法：右手持稳笛子，左手食指、中指、无名指一起在四、五、六孔上快速来回抹动，声如笛内有珠滚动；或左手持笛，右手飞指。 $\overset{tr}{\underline{6}} \ \overset{tr}{\underline{2}} \mid \overset{tr}{\underline{7 \ 1 \ 7 \ 6}} \mid \overset{tr}{\underline{5}}$ 中的“2”音，是全开六个音孔的“1”音用气冲顶到“2”音上去。

姑 苏 行

江先渭编曲
俞逊发演奏谱

1=C (C调曲笛 全按作5) 4/4

[引子] 自由地

mp *mf* *mf* *p* *mf* *fp* *ff*

渐快

mp *mf*

慢 (1 2 3 5 3 5 6) [-] 中板 行走地

f *mf* *mf*

p *mf*

p *mf*

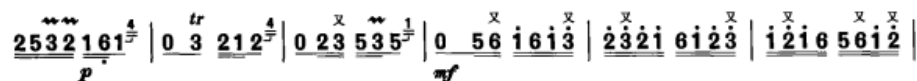
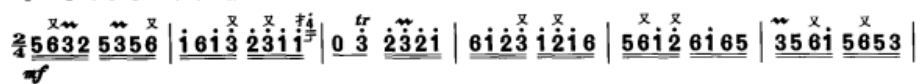
f *mf*

pp *mf*

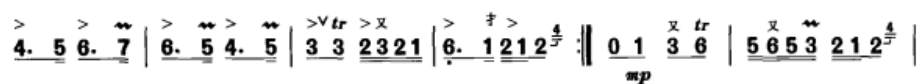
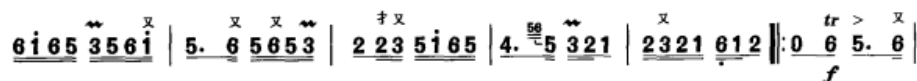
mf *mf*

mf *f*

【二】小快板 喜悦地

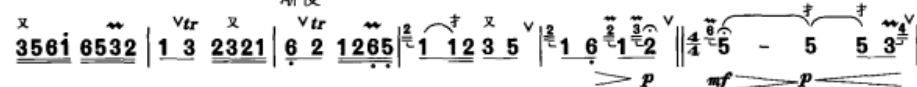


(第二遍弱奏)



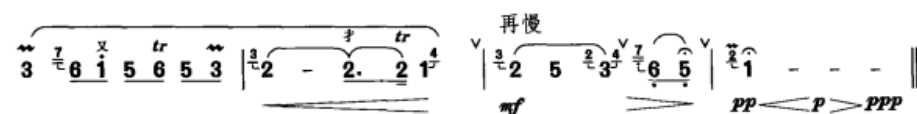
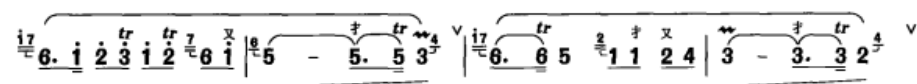
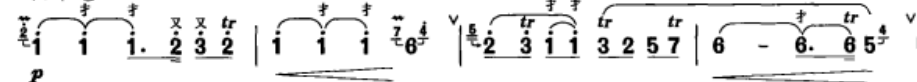
渐慢

【尾声】中板 稍快



慢板

回味地



演奏提示：乐曲以优美典雅的昆曲音调，表现了古城苏州的秀丽风光和人们游览观赏时的愉悦心情；具有浓郁的江南风味。

演奏好乐曲《姑苏行》，须有良好的气息，控制和运用好传统的“叠、打、赠、颤”南派笛技，使音乐抑扬顿挫、优美流畅，给人以昆曲的古色古香、典雅愉悦的艺术美感。

十级

秦川抒怀

1=A (E调笛 全按作2) 4/4

马迪曲

【引子】激昂有力、自由

由慢渐快

ff p f p p

ff ff mf mp mf p mf mp ff mp mf ff

4/4 5. 2̇ i̇ b7̇ 6̇ 5. i̇ 6̇ 5 4 3 2 | 1 2 4 2 1 b7̇ 6̇ 5. 1 2 4 | (5 6̇ 1 2 1 2 4) 5 4 5 i̇ b7̇ 6̇ 5. i̇ 6̇ |

i̇ 5 6 4 3 2 1. | 2. 5 4 5. 1 6 5 4 3 2 1 b7 0 1 | 2 4 5 1 2 b7 6 5 - |

5. 5 5 5 3 2 5 2 b7. 6 5 | 1. 1 1 1 6 5 1 4 3 2. | 5 b7 6 5 1 7 1 2 5. 1 4 3 2 1 |

b7 6. 4 2 1 7 6 5. 6 5 | 4. 5 2 b1 7 6 5. 6 5 | 4. 5 6 5 4 3 2 - |

2 5 i 6 5 4 3 2 b7 1 b7 0 1 | 2 4 5 1 2 b7 6 5 - 激动地 5 2 2 1 b7. i 6 |

5 2. 4 2 1 b7 6 5 - | 1 5 1 0 0 b7 6 5. 6 1 1 6 5 4 3 | 2. 5 5 5 1 5 4 3 2 - |

b7 6 5 1 7 6 5 1 6 1 1 2 | 5. 1 6 b7 6 5 6 1 4 3 2 | 1 0 5 7 7 1 2. 1 6 5 4 0 3 |

2. 2 2 2 2 1 b7 6 5. 6 5 | 1. 2 4 2. 1 6 5 4 3 2 2 1 | b7 6. 4 2 1 7 6 5 5 6 1 2 |

ff

【二】快板 热情地

4 2. \tilde{i} $\overset{\sim}{6}$ 5 4 - | $\frac{2}{4}$ $\overset{54}{5}$ $\overset{>}{5}$ $\overset{>}{5}$ $\overset{>}{5}$ $\overset{>}{5}$ $\overset{>}{5}$ $\overset{>}{5}$ ||: $\overset{2}{5}$ $\overset{2}{5}$ 6 | $\overset{1}{i}$ 6 5 4 |

f *mf*

$\overset{*}{2}$. $\overset{1}{i}$ $\overset{1}{i}$ 6 4 | $\overset{2}{5}$ $\overset{2}{5}$ 6 | $\overset{2}{i}$ $\overset{2}{i}$ 5 $\overset{2}{5}$ 4 | $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ |

$\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ |

mp

$\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{5}$ - :|| $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ |

奔放地

$\overset{2}{6}$ 0 2 | $\overset{2}{5}$ - | 5 2 | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ |

f

$\overset{2}{4}$ $\overset{2}{3}$ $\overset{2}{2}$ $\overset{2}{4}$ | $\overset{2}{5}$ - | 5 $\overset{2}{5}$ | $\overset{2}{i}$ - | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ | $\overset{2}{4}$ - | $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{3}$ |

f

轻柔地

$\overset{2}{2}$. $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{3}$ | $\overset{2}{2}$ - | $\overset{2}{2}$ - | $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ $\overset{2}{i}$ |

mp

$\overset{2}{1}$ $\overset{2}{6}$ $\overset{2}{1}$ | $\overset{2}{1}$ $\overset{2}{2}$ | $\overset{2}{5}$ $\overset{2}{i}$ | $\overset{2}{6}$. $\overset{2}{b7}$ $\overset{2}{6}$ $\overset{2}{5}$ | $\overset{2}{6}$ $\overset{2}{i}$ $\overset{2}{4}$ | $\overset{2}{4}$ $\overset{2}{3}$ $\overset{2}{2}$ | $\overset{2}{b7}$ $\overset{2}{1}$ $\overset{2}{5}$ | $\overset{2}{5}$ $\overset{2}{b7}$ $\overset{2}{1}$ |

$\overset{2}{2}$. $\overset{2}{i}$ $\overset{2}{6}$ $\overset{2}{5}$ | $\overset{2}{4}$ 0 $\overset{2}{0}$ $\overset{2}{3}$ | $\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{2}$ | $\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{b7}$ $\overset{2}{6}$ | $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{5}$ 0 $\overset{2}{2}$ $\overset{2}{3}$ $\overset{2}{5}$ $\overset{2}{6}$ |

f

$\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{i}$ | $\overset{2}{6}$ $\overset{2}{i}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{3}$ | $\overset{2}{2}$ $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{5}$ $\overset{2}{b7}$ $\overset{2}{1}$ $\overset{2}{7}$ $\overset{2}{1}$ | $\overset{2}{2}$ $\overset{2}{3}$ $\overset{2}{2}$ $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{3}$ | $\overset{2}{i}$ $\overset{2}{2}$ $\overset{2}{i}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{i}$ | $\overset{2}{6}$ $\overset{2}{i}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{3}$ |

mf

$\overset{2}{2}$ $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{5}$ $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{4}$ $\overset{2}{3}$ | $\overset{2}{2}$ $\overset{2}{1}$ $\overset{2}{b7}$ $\overset{2}{6}$ $\overset{2}{5}$ 0 | $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{b7}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{1}$ $\overset{2}{2}$ $\overset{2}{b7}$ $\overset{2}{6}$ $\overset{2}{5}$ $\overset{2}{5}$ | $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{3}$ $\overset{2}{2}$ $\overset{2}{2}$ | $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{4}$ $\overset{2}{3}$ $\overset{2}{2}$ $\overset{2}{2}$ |

mp

$\frac{3}{4}$ $\overset{2}{i}$ $\overset{2}{1}$ $\overset{2}{5}$ $\overset{2}{b7}$ $\overset{2}{7}$ $\overset{2}{1}$ $\overset{2}{1}$ | $\overset{2}{2}$ $\overset{2}{2}$ $\overset{2}{4}$ $\overset{2}{4}$ | $\overset{2}{5}$ $\overset{2}{5}$ $\overset{2}{2}$ $\overset{2}{4}$ $\overset{2}{4}$ $\overset{2}{5}$ $\overset{2}{6}$ $\overset{2}{6}$ $\overset{2}{1}$ $\overset{2}{1}$ | $\frac{2}{4}$ $\overset{2}{2}$ 0 $\overset{2}{2}$ | $\overset{2}{2}$ - | $\overset{2}{2}$ - | $\overset{2}{2}$ - | $\overset{2}{2}$ - |

p *f* *p*

The musical score is written in numbered notation (jianpu) for a guqin. It consists of several systems of notation. The first system shows a sequence of notes: 2 - | 2 - | 2 - | 2 - | 2 - | 2 - | 2 - | 2 - | 2 - | 2 - | 2̇ | 1̇ | b7 6 | 5 1̇ | 4 2 | 5̇ 5̇ 6̇ | 5̇ 5̇ 6̇ | 1̇ 1̇ 2̇ | 1̇ 1̇ 2̇ |. The second system includes dynamic markings like *f* and *mf*. The third system is marked '【三】舒展地' (舒展地) and features a long note with a 'u' above it, indicating a trill. The fourth system has a '10' above it, possibly indicating a fingering or a specific technique. The fifth system includes a '10' above it and a 'f' dynamic marking. The sixth system has a '10' above it and a 'f' dynamic marking. The seventh system has a '10' above it and a 'f' dynamic marking. The eighth system has a '10' above it and a 'f' dynamic marking. The ninth system has a '10' above it and a 'f' dynamic marking. The tenth system has a '10' above it and a 'f' dynamic marking. The eleventh system has a '10' above it and a 'f' dynamic marking. The twelfth system has a '10' above it and a 'f' dynamic marking. The thirteenth system has a '10' above it and a 'f' dynamic marking. The fourteenth system has a '10' above it and a 'f' dynamic marking. The fifteenth system has a '10' above it and a 'f' dynamic marking. The sixteenth system has a '10' above it and a 'f' dynamic marking. The seventeenth system has a '10' above it and a 'f' dynamic marking. The eighteenth system has a '10' above it and a 'f' dynamic marking. The nineteenth system has a '10' above it and a 'f' dynamic marking. The twentieth system has a '10' above it and a 'f' dynamic marking. The twenty-first system has a '10' above it and a 'f' dynamic marking. The twenty-second system has a '10' above it and a 'f' dynamic marking. The twenty-third system has a '10' above it and a 'f' dynamic marking. The twenty-fourth system has a '10' above it and a 'f' dynamic marking. The twenty-fifth system has a '10' above it and a 'f' dynamic marking. The twenty-sixth system has a '10' above it and a 'f' dynamic marking. The twenty-seventh system has a '10' above it and a 'f' dynamic marking. The twenty-eighth system has a '10' above it and a 'f' dynamic marking. The twenty-ninth system has a '10' above it and a 'f' dynamic marking. The thirtieth system has a '10' above it and a 'f' dynamic marking. The thirty-first system has a '10' above it and a 'f' dynamic marking. The thirty-second system has a '10' above it and a 'f' dynamic marking. The thirty-third system has a '10' above it and a 'f' dynamic marking. The thirty-fourth system has a '10' above it and a 'f' dynamic marking. The thirty-fifth system has a '10' above it and a 'f' dynamic marking. The thirty-sixth system has a '10' above it and a 'f' dynamic marking. The thirty-seventh system has a '10' above it and a 'f' dynamic marking. The thirty-eighth system has a '10' above it and a 'f' dynamic marking. 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演奏提示：《秦川抒怀》以陕北地方戏曲音乐为素材创作，激扬豪放地抒发对欣欣向荣的秦川的由衷赞美之情。本曲1989年4月获“全国民族乐器电视大奖赛”优秀作品奖。

【引子】面对鸟语花香锦绣秦川的激动心情。【一】慢板，为戏曲韵味浓郁的赞歌。开始宜弱奏，然后不断起伏，加大力度对比，务求抒发充分。【二】快板，热情奔放，要强调力度对比，循环换气的长音“2”音要尽情抒发、强弱变化鲜明。【三】舒展壮阔，显示秦川人民对更加美好未来的热切追求。

秦川泛指今陕西、甘肃秦岭以北的平川地带。作者为模拟板胡压弦、滑音的韵味，创造性地运用揉音等技巧，使乐曲风格独特，倍添情趣。揉音多用在“b7”音上，要领是：左手食指与中指（按半孔）同时像弦乐揉弦那样来回揉滚指头。注意，频率不要太密，要形成“b7”音至“1”音之间（不是“b7”音至“7”音之间）的滚动音。本谱以“u”代表揉音，持续揉音为“u~~~~”。

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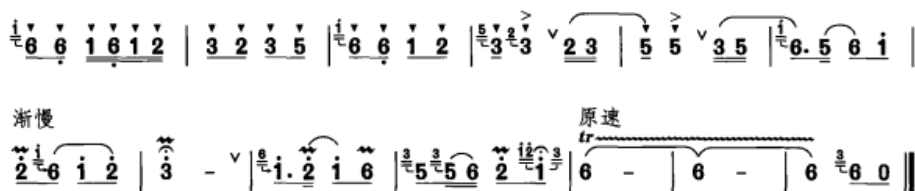
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演奏提示:《牧民新歌》以内蒙古民歌音调为素材创作,草原气息浓郁,展现出迷人的草原景色和牧民富有诗意的放牧生活画卷。作于1966年。

乐曲为四部曲式结构。自由舒展的引子展现出一望无际的大草原碧草如茵、天高云淡的画面,中间短暂的离调增添了蓬勃激越之情,尤为动人。优美抒情的慢板,似牧民悠然骑在缓行的马上,时而明朗甜美,时而低回内在,时而又激动热情地歌唱生活、赞美家乡。小快板,以跳荡的吐音描绘牧民策马驰骋时蹄声达达的欢乐情景。由主题音调拉宽的如歌段,似牧民身骑飞驰的骏马自豪高歌,继而音乐在高音区转宫调式,色彩明亮新颖,将激越之情推向新高潮。最后一段,情绪更为热烈,形成了万马奋蹄、嘶鸣声声的欢腾气氛。

演奏要清润甜美、深切而细腻,融抒情与激情为一体,使之极富歌唱性和感染力。气息控制要自如,音量幅度要宽广,让每个音符发自心底伴着情感的色彩飞出笛外。

幽兰逢春(二)

1 = ^bE (全按作 3) $\frac{4}{4}$

赵松庭、曹星曲
李滨扬改编

【引子】散板 幽静而激情地

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ppp 慢板 典雅、如怨如慕 $\text{♩} = 42$ *mf*

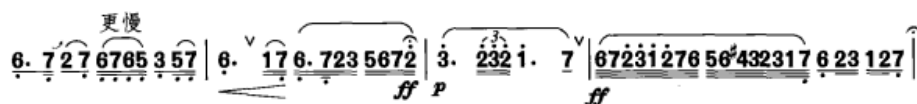
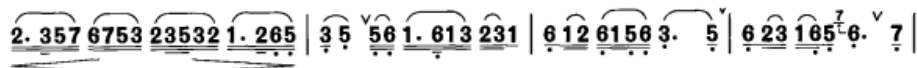
$\overset{\text{65}}{\underline{\underline{2. 3 5 7}}} \overset{\text{65}}{\underline{\underline{6 7 5 3}}} \overset{\text{65}}{\underline{\underline{2 3 1}}} \overset{\text{65}}{\underline{\underline{2 7}}} | \overset{\text{65}}{\underline{\underline{6 3 5 6}}} \overset{\text{65}}{\underline{\underline{2 0 3 1 2 7}}} \overset{\text{65}}{\underline{\underline{6}}} - \overset{\text{65}}{\underline{\underline{6. 7 6 3}}} \overset{\text{65}}{\underline{\underline{5 6 1 7}}} \overset{\text{65}}{\underline{\underline{6.}}} \overset{\text{65}}{\underline{\underline{5 7}}} | \overset{\text{65}}{\underline{\underline{6. 7 6 3}}} \overset{\text{65}}{\underline{\underline{2 0 3 2 3 4}}} \overset{\text{65}}{\underline{\underline{3.}}} \overset{\text{65}}{\underline{\underline{5 4}}} |$
略快 $\text{♩} = 44$ *p*

$\overset{\text{65}}{\underline{\underline{3. 4 3 2}}} \overset{\text{65}}{\underline{\underline{1 6 1 2}}} \overset{\text{65}}{\underline{\underline{3 6 1}}} \overset{\text{65}}{\underline{\underline{5 6 4 3}}} | \overset{\text{65}}{\underline{\underline{2. 3 5 7}}} \overset{\text{65}}{\underline{\underline{6 7 5 3}}} \overset{\text{65}}{\underline{\underline{2 3 5 3 2}}} \overset{\text{65}}{\underline{\underline{1. 2 6 5}}} | \overset{\text{65}}{\underline{\underline{3 5}}} \overset{\text{65}}{\underline{\underline{5 6 1.}}} \overset{\text{65}}{\underline{\underline{6 1 3}}} \overset{\text{65}}{\underline{\underline{2 3 1}}} | \overset{\text{65}}{\underline{\underline{6. 1 6 1 5}}} \overset{\text{65}}{\underline{\underline{7 6.}}} \overset{\text{65}}{\underline{\underline{5 7}}} |$

$\overset{\text{65}}{\underline{\underline{6.}}} \overset{\text{65}}{\underline{\underline{2 7 6.}}} \overset{\text{65}}{\underline{\underline{5 7}}} | \overset{\text{65}}{\underline{\underline{6. 2 1 2 1 7 6.}}} \overset{\text{65}}{\underline{\underline{2 1 7 6.}}} \overset{\text{65}}{\underline{\underline{7 5 6 4}}} | \overset{\text{65}}{\underline{\underline{3. 6 5.}}} \overset{\text{65}}{\underline{\underline{6 5 6 4 3}}} \overset{\text{65}}{\underline{\underline{3}}} \overset{\text{65}}{\underline{\underline{7 6.}}} | \overset{\text{65}}{\underline{\underline{6. 7 6 5}}} \overset{\text{65}}{\underline{\underline{3 6 1 5 6 4}}} \overset{\text{65}}{\underline{\underline{3 0 3 5}}} \overset{\text{65}}{\underline{\underline{6 1 2 3}}} |$
f *ff*

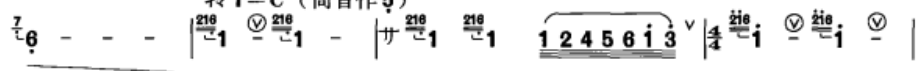
$\overset{\text{65}}{\underline{\underline{5. 1 7 1 7 6}}} \overset{\text{65}}{\underline{\underline{5 6 1 7 6}}} \overset{\text{65}}{\underline{\underline{5 6 4 3}}} | \overset{\text{65}}{\underline{\underline{2. 3 2.}}} \overset{\text{65}}{\underline{\underline{3 2 7 6 7 2 3}}} \overset{\text{65}}{\underline{\underline{7 2 6 3}}} | \overset{\text{65}}{\underline{\underline{5.}}} \overset{\text{65}}{\underline{\underline{6 5.}}} \overset{\text{65}}{\underline{\underline{6 5.}}} | \overset{\text{65}}{\underline{\underline{5 3 5 6}}} \overset{\text{65}}{\underline{\underline{1 6 2 4}}} \overset{\text{65}}{\underline{\underline{3 0 6 1}}} \overset{\text{65}}{\underline{\underline{5 6 4 3}}} |$
p

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 MSU iThesis 62012060013 thesis / recv: 22032565 20:03:01 / seq: 22

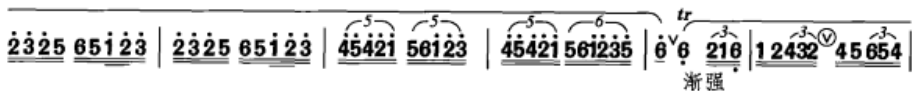
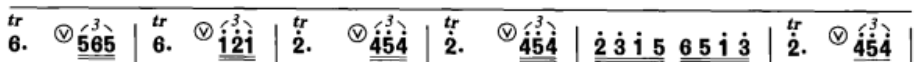
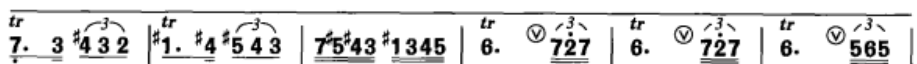
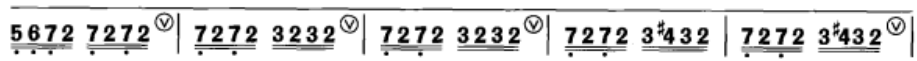
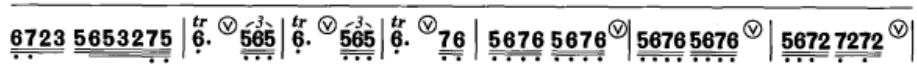
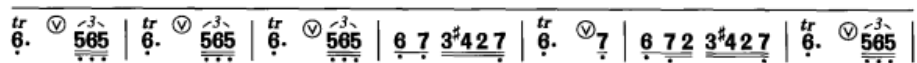
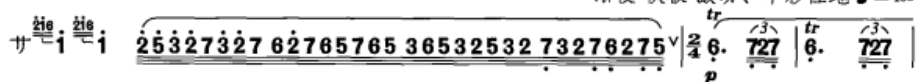


渐明朗、自由地

转 1=C (简音作 5)



渐慢 快板 激动、华彩性地 ♩ = 168



3. $\underline{23} \mid \underline{5. \underline{6} \underline{17} \underline{6764}} \mid \underline{3. \underline{5} \underline{23212}} \mid 3. \underline{56} \mid \underline{2 \dot{2} \dot{2} 75} \mid \underline{6. \dot{1} 43} \mid$

$\underline{2. \underline{357} \underline{676762}} \mid \underline{351} \underline{12356} \mid \underline{1 \dot{6} \dot{2} 3 \dot{5}} \mid 1. \underline{76} \mid \underline{2 \dot{5} \dot{5} \dot{6} \dot{5} 4 \dot{3}} \mid \underline{2 \dot{1} 2} \underline{235} \mid$
f

$\underline{5. \underline{3} \underline{5} \underline{6}} \mid \underline{2 \underline{232} 7 5} \mid \underline{6 \underline{615617}} \mid \underline{6 \underline{6561}} \mid \underline{2 \dot{1} 2} \underline{3 \dot{4} 3 \dot{2}} \mid 1. \underline{76} \mid$
p *f*

$\underline{5 \dot{5} \dot{5} \dot{6} \dot{7}} \mid \underline{\dot{6} \dot{5} \dot{4} \underline{4 \dot{2} \dot{5} \dot{6}}} \mid \underline{5 \dot{5} \dot{6} \dot{7} \dot{6} \dot{5}} \mid \underline{\dot{6} \dot{5} \dot{4} \underline{235}} \mid \underline{6 \dot{5} \dot{5} \dot{4} \dot{3} \dot{5} \dot{1}} \mid \underline{2 \underline{2 \dot{4} \dot{1} \dot{2} \dot{4} \dot{3}}} \mid$

$\underline{2 -} \mid \underline{5 \dot{5} \dot{6} \dot{7} \dot{6} \dot{5}} \mid \underline{\dot{6} \dot{5} \dot{4} \underline{4 \dot{6} \dot{1} \dot{2}}} \mid \underline{5 \dot{5} \dot{6} \dot{1} \dot{2}} \mid \underline{5 \dot{6} \dot{1} \dot{2}} \underline{5 \dot{6} \dot{1} \dot{2}} \mid \underline{5 \dot{6} \dot{1} \dot{2}} \underline{5 \dot{6} \dot{1} \dot{2}} \mid$
 渐慢 由慢到快

$\underline{4 \dot{5} \dot{7} \dot{1}} \underline{4 \dot{5} \dot{7} \dot{1}} \mid \underline{4 \dot{5} \dot{7} \dot{1}} \underline{4 \dot{5} \dot{7} \dot{1}} \mid \underline{4 \dot{7} \dot{1} \dot{2}} \underline{4 \dot{7} \dot{1} \dot{2} \dot{4} \dot{5}} \mid \underline{\dot{6}} - \mid \underline{6 \underline{3212} 1 \underline{5 \dot{4} \dot{3} \dot{4}}} \mid \underline{6 \underline{3212} 1 \underline{5 \dot{4} \dot{3} \dot{4}}} \mid$
f *tr*

$\underline{3 \dot{7} \dot{1} \dot{2} \dot{1} \dot{7}} \underline{5 \dot{1} \dot{2} \dot{4} \dot{2} \dot{1}} \mid \underline{3 \dot{7} \dot{1} \dot{2} \dot{1} \dot{7}} \underline{5 \dot{1} \dot{2} \dot{4} \dot{2} \dot{1}} \mid \underline{5 \dot{7} \dot{1} \dot{2} \dot{3} \dot{4} \dot{5} \dot{7} \dot{1} \dot{2} \dot{3} \dot{4} \dot{5}} \mid \underline{\dot{5}} - \underline{v} \mid$

$\underline{4. \underline{5} \underline{3} \underline{3}} \mid \underline{4} - \mid \underline{1. \underline{7} \underline{5} \underline{7}} \mid \underline{3} - \mid \underline{2 \dot{3}} \underline{v} \mid \underline{1} - \mid \underline{1} - \mid \underline{1} - \parallel$
f *p* *f*

演奏提示：作者在乐曲前曾有这么一段题记：“周总理说：‘昆曲是朵兰花。’今天，兰花逢春，重放幽香。缅怀总理，仿昆曲情趣，作此曲。”作者以写意的手法，倾诉自己的情怀。1989年春，经笛子大师赵松庭先生同意，对《幽兰逢春》的后半部分加以修改，由著名作曲家李滨扬先生重新改编创作。改编后的快板，运用了大段连续循环换气技巧，增加了乐曲演奏的难度，使全曲音乐线条更加生动流畅，华丽而富有美感。

(0 2̣4̣ 6̣ 0 | 0 2̣4̣ 5̣ 0 | 0 2̣4̣ 6̣ 0 | 0 2̣4̣ 5̣ 0)

6̣ 0 0 2̣4̣ | 5̣ 0 0 2̣4̣ | 6̣ 0 0 2̣4̣ | 5̣ 0 0 2̣4̣ | 6̣ 6̣ 6̣ 2̣3̣2̣1̣ | ^{tr}6̣ 5̣ |

4̣. 6̣ 5̣1̣3̣ | 2̣. 5̣ | 1̣ 1̣ 6̣1̣6̣1̣ | 2̣ 2̣ 2̣5̣ | 1̣ 1̣6̣ 5̣6̣1̣ | 6̣ - | 6̣. 1̣ 2̣ 3̣ |

(0 2̣4̣ 6̣ 0 | 0 2̣4̣ 5̣ 0 | 0 2̣4̣ 6̣ 0 | 0 2̣4̣ 5̣ 0)

1̣ 2̣ 1̣ 6̣ 5̣ 2̣4̣ | 6̣ 0 0 2̣4̣ | 5̣ 0 0 2̣4̣ | 6̣ 0 0 2̣4̣ | 5̣ 0 0 2̣4̣ | 6̣ 6̣ 1̣ 2̣ 3̣ 2̣ 1̣ |

^{tr}6̣ 5̣ | 4̣. 6̣ 5̣1̣3̣ | 2̣. (5̣ | 1̣. 6̣ | 2̣. 5̣ | 4̣. 5̣ | 2̣ - | 1̣6̣ 2̣5̣ | 5̣2̣ 4̣5̣ | 6̣1̣ 5̣ 3̣ |

紧张地 转快 ♩ = 168 [二]

2̣. 5̣ 6̣ 5̣ 4̣. 5̣ | 6̣1̣6̣1̣ 2̣1̣6̣5̣ | 4̣ 0 0 5̣ | 7̣ - | 7̣ -) | 4̣2̣6̣5̣ 1̣6̣2̣1̣ | 4̣2̣6̣5̣ 1̣6̣2̣1̣ | 6̣1̣2̣ 0 1̣ |

6̣1̣6̣5̣ 4̣ | 0 5̣ 3̣ | 2̣ 5̣ 3̣ 5̣ | 2̣ 5̣ 3̣ 5̣ | 2̣2̣5̣5̣ 3̣3̣5̣5̣ | 2̣2̣5̣5̣ 3̣3̣5̣5̣ |

2̣ 2̣ 1̣ 6̣ 1̣ | 2̣ 2̣ 2̣ 2̣ 2̣ | 2̣ 2̣ 2̣ 2̣ | 2̣ 2̣ 2̣ 2̣ || 2̣ 1̣ 6̣ 1̣ 6̣ 5̣ | 4̣ 0 (4̣ 4̣) | 5̣ 3̣ 2̣ 1̣ 2̣ 6̣ 1̣ |

2̣ 0 (2̣ 2̣) || 6̣ - | 6̣ - | 6̣ - | 6̣ - || 6̣ 1̣ 1̣ 6̣ 5̣ | 4̣ 5̣ 5̣ 4̣ 2̣ ||

6̣6̣5̣5̣ 4̣4̣2̣2̣ | 6̣6̣5̣5̣ 4̣4̣2̣2̣ | 6̣6̣5̣5̣ 4̣4̣2̣2̣ | 5̣. 4̣ 2̣ 5̣ | 0 1̣ 2̣ 2̣ | 0 1̣ 2̣ 2̣ |

0 1̣ 4̣ 4̣ | 0 1̣ 4̣ 4̣ | 0 1̣ 6̣ 6̣ | 0 1̣ 6̣ 6̣ | 2̣ 2̣ 4̣ 4̣ | 5̣ 5̣ 6̣ 6̣ | 1̣ 1̣ 2̣ 2̣ |

4̣ 4̣ 5̣ 5̣ | 6̣ 6̣ 1̣ 1̣ | 2̣ 2̣ 2̣ 2̣ 4̣ 4̣ 4̣ 4̣ | 5̣ 5̣ 5̣ 5̣ 6̣ 6̣ 6̣ 6̣ | 1̣ 1̣ 1̣ 1̣ 2̣ 2̣ 2̣ 2̣ | 4̣ 4̣ 4̣ 4̣ 5̣ 5̣ 5̣ 5̣ |

渐强

6̣6̣6̣6̣ 1̣ 1̣ 1̣ 1̣ | 2̣ 3̣ 2̣ 1̣ 6̣ 1̣ 6̣ 1̣ | 2̣ 3̣ 2̣ 1̣ 6̣ 1̣ 6̣ 1̣ | 2̣ 3̣ 2̣ 1̣ 6̣ 1̣ 6̣ 1̣ | 5̣ 6̣ 5̣ 4̣ 2̣ 4̣ 2̣ 1̣ | 6̣ 1̣ 2̣ 4̣ 2̣ 1̣ 6̣ 1̣ |

5̣6̣5̣4̣ 5̣6̣5̣4̣ | 2̣4̣5̣6̣ 2̣4̣5̣6̣ | 2̣6̣4̣2̣ 1̣6̣5̣4̣ | 2̣4̣5̣6̣ 2̣4̣5̣6̣ | 2̣6̣4̣2̣ 1̣6̣5̣4̣ | 2̣ 3̣ 2̣

2̣ 1̣ 6̣ | 6̣ 5̣ 4̣ | 2̣ 1̣ 6̣ | 6̣ 5̣ 4̣ | 4̣ 3̣ 5̣ | 2̣3̣3̣3̣ 2̣3̣3̣3̣ | 4̣5̣5̣5̣ 4̣5̣5̣5̣

6̣1̣1̣1̣ 6̣1̣1̣1̣ | 2̣3̣2̣1̣ 2̣3̣2̣1̣ | 4̣5̣4̣3̣ 4̣5̣4̣3̣ | 5̣6̣5̣4̣ 5̣6̣5̣4̣ | 6̣1̣6̣5̣ 6̣1̣6̣5̣ | 2̣1̣6̣1̣ 2̣1̣6̣1̣

2̣2̣2̣2̣ 2̣2̣2̣2̣ | 2̣2̣2̣2̣ 2̣2̣2̣2̣ | 2̣2̣2̣2̣ 2̣2̣2̣2̣ | 2̣2̣2̣2̣ 2̣2̣2̣2̣ | (2̣ 4̣ 5̣ | 2̣ 0 | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣

ff

6̣ 5̣ 6̣ | 2̣ 0 | 2̣ 5̣ 6̣ | 4̣ 5̣ 6̣ | 3̣ 2̣ 1̣ 6̣ | 2̣ 0 | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣

6̣ 6̣ 1̣ | 2̣ 1̣ | 4̣ 2̣ 1̣ 5̣ | 6̣ - | 5̣ 2̣ 4̣ 5̣ | 6̣ 4̣ 5̣ 6̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣ | 2̣2̣2̣ 2̣2̣2̣

1̣ 2̣ 6̣ 1̣ | 2̣ 0 0 | 2̣ 0 0 | 2̣ 0 0 | 2̣ 0 (2̣*))
(琵琶绞弦)

2̣ 2̣ 2̣ 2̣ 2̣ 2̣ 2̣ | 2̣ 1̣ 6̣ 1̣ 2̣ 1̣ 6̣ 1̣ | 2̣ 1̣ 6̣ 1̣ 2̣ 1̣ 6̣ 1̣ | 2̣ 1̣ 6̣ 1̣ 2̣ 1̣ 6̣ 1̣ | 2̣ 1̣ 6̣ 1̣ 2̣ 1̣ 6̣ 1̣ | 2̣ 0 0

【三】自由板 由慢渐快 渐慢

サ 2̣ - - - 4̣ 5̣ 2̣ 4̣ 5̣ 6̣ 1̣ 2̣ | 6̣ 1̣ 2̣ 4̣ 1̣ 2̣ 4̣ 5̣ | 2̣ 4̣ 5̣ 6̣ 1̣ 2̣ 6̣ 1̣ | 2̣ - - -

6̣ 5̣ #4̣ 5̣ | 6̣ - - - 3̣ 5̣ | 3̣ 2̣ 1̣ 2̣ 6̣ | 1̣ 2̣ -

2̣ 5̣ 4̣ 5̣ 6̣ 5̣ 1̣ 6̣ | 2̣ 5̣ 4̣ 5̣ 6̣ 5̣ 1̣ 6̣ | 1̣ 2̣ 1̣ 6̣ | 5̣ #4̣ 5̣ 6̣ 1̣ 2̣ | 6̣ 1̣ 2̣ 6̣ 5̣ 6̣

【四】慢板 如歌地 ♩=40 渐慢

#4̣ 2̣ 4̣ 5̣ 6̣ 5̣ 6̣ 2̣ | 3̣ 5̣ 6̣ 5̣ 1̣ 5̣ 3̣ | 2̣ 0 6̣ 5̣ 1̣ 5̣ 3̣ | 2̣ 1̣ 6̣ 1̣ | 2̣ 2̣ | 2̣ 5̣ 6̣ | 5̣ 4̣ 2̣ 4̣ 2̣ 4̣ 5̣

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4 2 4 2 4 5 | 6. i | 4 5 3 | 2 2 1 0 1 | 2 - | 2. 3 2 i | 6 i | 2. i |

i 6. i | 4 5. 6 | 4 4 5 i 3 | 2 - | 6. i 2 3 2 i 6 i | i 2. i | 6. i 6 5 4 2 i 5 |

2 i 2 4 | 5. 6 4 4 4 | 4 4 4 4 4 4 | 3 0 1 1 1 | 1 1 1 1 0) (0 6 | 2 4 2 0)

i 6. i | 5. 6 4 | 0 0 5 6 | 3. 2 1 | 1 0 6 ||: 2 4 2 0 | 0 0 6 ||

2 4 2 6 | 2 4 2 6 | 2 4 2 6 | 2 4 2 6 | 2 2 4 4 2 2 6 6 | 2 2 4 4 2 2 6 6 | 2 0 2 4 6 i |

p 渐强

2 - | 2 - | 2 - | 2 - ||: 2 i i 6 5 5 | 4 5 5 4 2 2 | i 6 6 i 3 3 |

ff

2 3 3 2 3 3 ||: 6 2 2 4 2 2 | 6 2 2 4 2 2 | i 6 6 5 6 6 | i 6 6 5 6 6 | 2 i i 6 i i |

(2 2. 1 | 2 - | 6 6. 1 | 2 - | 4. 5 |

2 i i 6 i i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i |

6 5 | 3. 2 1 6 | 2 - | 2 2. 1 | 6. 2 | 6. 2 6 5 |

2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i | 2 i 6 i 2 i 6 i |

4 - | 5 2 4 5 | 6 4 5 6 | 1 2 6 1 | 2 0 0 |

2 i 6 i 2 i 6 i | 5 - | 6 - | 1 - | 2 2 2 2 2 2 2 2 |

2 0 0 | 2 6 1 2 6 1 | 2 6 1 2 6 1 | 2 0 0 | 2 -)

2 2 2 2 2 2 2 2 | 2 2 2 2 2 2 2 2 | 2 2 2 2 2 2 2 2 | 2 - | i 2 - ||

演奏提示：这是一首较早运用写实手法创作的笛子叙事曲，描绘与赞颂了在硝烟战火中青年小战士英勇顽强的形象。演奏时需具有娴熟而快速的吐音功力及精湛充沛的底气，方能在最后一段中运用一口气吹奏12小节的快速吐音。本曲至今仍属一首难度较高的笛曲，其音乐取材于东北“二人转”。

星籁——中国箫曲100首

46. 阳关三叠

古 曲
陆星毅箫谱

1=G或F(全按作5)

【一】♩=35

$\frac{2}{4}$ 5. 6 1 2 | 2 - | 6. 1 3 2 | 1 2. 3 | 2 - | 5. 6 5 | 3 5 5 3 2 | 1 2. 3 |

$\frac{1}{2}$ 2 - | 1. 6 6 6 | 5 6 | 6 - | 6. 1 3 2 | 1 2 | 2 - | 2. 1 6 1 |

$\frac{2}{4}$ 1 - | 6. 6. | 6. 6. | 6 5 6 5 6 | $\frac{3}{4}$ 3 3 - | $\frac{2}{4}$ 2. 1 6 1 | 1 - | 3. 1 |

$\frac{2}{4}$ 2 - | 3. 1 | 2 - | 3 3 1 2 | $\frac{5}{4}$ 6. 5 | $\frac{5}{4}$ 6 - | 6 5 | 6 - ||

【二】♩=74

$\frac{2}{4}$ 6. 1 2 1 | 3 2 | 2 - | 5. 6 5 | 3 5 3 5 3 2 | 1 2. 3 | 2 - |

1. 2 1 | 6. 1 6. 1 6. 5 | 5 5 6 | 5 - $\frac{4}{4}$ | 1. 2 3 5 | 5 3 2 1 |

$\frac{2}{4}$ 2 3 2 - | 5 5 3 5 | 3 5 3 2 2 | 2. 3 1 | 2. 1 6 1 | 1 - | 6. 6. |

$\frac{2}{4}$ 6. 6. | 6. 5 6 5 6 | $\frac{3}{4}$ 3 3 - | $\frac{2}{4}$ 2. 1 6 1 | 1 - | 3. 1 | 2 - |

3. 1 | 2 - | 3 3 1 2 | 6. 5 | 6 - | 6 5 | 6 - ||

渐慢

【三】♩=76

$\frac{2}{4}$ $\underline{\underline{6. \underline{1} \underline{2} \underline{1}}}$ | 3 2 | $\overset{x}{2}$ - | $\overset{x}{5. \underline{\underline{6} \underline{5}}}$ | $\overset{x}{3} \overset{x}{5}$ $\underline{\underline{3. \underline{5} \underline{3} \underline{2}}}$ | 1 $\overset{x}{2.}$ $\overset{x}{3}$ |
 $\overset{x}{2}$ - | $\overset{x}{1} \underline{\underline{2} \underline{3} \underline{1}}$ | $\overset{x}{6} \underline{\underline{1}}$ $\overset{x}{6} \underline{\underline{1} \underline{6} \underline{5}}$ | $\overset{x}{5.}$ $\overset{x}{6}$ | $\overset{x}{5} \overset{x}{5}$ 1 2 | $\overset{x}{3} \overset{x}{5}$ $\overset{x}{5} \underline{\underline{3} \underline{2}}$ | $\frac{3}{4}$ 1 $\underline{\underline{2} \underline{3} \underline{2}}$ |
 $\frac{2}{4}$ $\overset{x}{2.}$ $\overset{x}{1}$ $\overset{x}{6} \underline{\underline{1}}$ | 1 - | $\overset{x}{6}$ $\overset{x}{6}$ | $\overset{x}{6}$ $\overset{x}{6}$ | $\overset{x}{6.}$ $\overset{x}{5}$ $\overset{x}{6} \underline{\underline{5} \underline{6}}$ | $\frac{3}{4}$ 3 3 - | $\frac{2}{4}$ $\overset{x}{5}$ $\overset{x}{6} \underline{\underline{1} \underline{6}}$ |
 $\overset{x}{5} \underline{\underline{6} \underline{1} \underline{6}}$ | $\overset{x}{5} \underline{\underline{3} \underline{5} \underline{3} \underline{2}}$ | $\frac{3}{4}$ 1 1 - | $\frac{2}{4}$ $\overset{x}{3} \underline{\underline{3} \underline{5} \underline{3} \underline{2}}$ | $\frac{3}{4}$ $\overset{x}{2}$ $\overset{x}{2}$ - | $\frac{2}{4}$ $\overset{x}{1.}$ $\overset{x}{1}$ $\overset{x}{6} \underline{\underline{6}}$ | $\overset{x}{1} \underline{\underline{1}}$ $\overset{x}{2} \underline{\underline{2}}$ |
 $\overset{x}{3} \overset{x}{3.}$ | $\overset{x}{5} \underline{\underline{3} \underline{5} \underline{3} \underline{2}}$ | $\overset{x}{2}$ $\overset{x}{2}$ | $\overset{x}{3.}$ $\overset{x}{2} \underline{\underline{2}}$ | $\frac{3}{4}$ $\overset{x}{3.}$ $\overset{x}{2}$ $\overset{x}{3} \underline{\underline{2} \underline{2}}$ | $\overset{x}{2.}$ $\overset{x}{1}$ $\overset{x}{6} \underline{\underline{1} \underline{1}}$ | $\frac{2}{4}$ $\overset{x}{3}$ $\overset{x}{1} \underline{\underline{2}}$ |
 $\overset{x}{3} \underline{\underline{1}}$ $\overset{x}{2} \underline{\underline{2}}$ | $\frac{3}{4}$ $\overset{x}{3} \underline{\underline{5}}$ $\overset{x}{3} \underline{\underline{1}}$ 2 | $\frac{2}{4}$ $\overset{x}{6} \underline{\underline{5}}$ $\overset{x}{6} \underline{\underline{6}}$ | $\overset{x}{6} \underline{\underline{5}}$ $\overset{x}{6} \underline{\underline{6}}$ | $\overset{x}{6} \underline{\underline{5}}$ $\overset{x}{6} \underline{\underline{5}}$ | $\overset{x}{6}$ $\overset{x}{5}$ | $\overset{x}{6}$ - ||

乐曲说明

乐曲是根据唐代诗人王维的七言绝句《送元二使安西》谱写的一首古曲。大约宋代该曲谱便已失传，现今古曲《阳关三叠》是由一首琴歌改编而成，最早见于明代《浙音释字琴谱》中，以辞达意，可歌可咏，千言万语，道不尽离别珍重。其后，历代琴家均有各自演绎并载于其琴谱之中。

演奏提示

全曲分为三段，以一个曲调作变化，反复叠唱三遍而成。注意三段速度各不一样，总体由慢至快。

第一部分，音乐形象鲜明，主题突出。演奏时注意气息饱满，速度缓慢，音调委婉深沉，表现了不忍惜别的心情。第二部分，中速演奏，情绪涌动，离泪沾巾，无复相辅仁，思君感怀。第三部分，演奏时稍增速，情绪起伏较大，注意控制气息力度和强弱对比。全曲言简意赅，古朴大气，丝丝入扣，连续反复呈述的“66 66”八度大跳，情真意切地道出心中万般的不舍与无奈。

南 韵

风雨送春归，飞雪迎春到。
 已是悬崖百丈冰，犹有花枝俏，
 俏也不争春，只把春来报。
 待到山花烂漫时，她在丛中笑。

张 维 良 曲
 李小瑾订筝指法

1 = C
 ♩ = 46

筝

4

笛

筝

8

慢板

12

16

20

pp

mp

左

左

60

3[#]434 6764 | 676[#]4 6434 | 6767 2³2⁷ | 2³2⁷ 2⁷6[#]4 | 676[#]4 6764 | 676[#]4 6764 |

66

笛 676[#]4 6434 | 3[#]434 3434 | 3⁷67 673⁷ | 3⁷3⁷ 3⁷[#]1⁷ | [#]1⁷67 6767 |

琴 0 7[#]1⁷ | 2⁷ 2⁷ | 2⁷ 2⁷ | 2⁷ 2⁷ | 2⁷ 2⁷ | 2⁷ 2⁷ |

71

笛 2³2³ 4[#]543 | 4[#]545 6165 | 6[#]165 4[#]545 | 6265 4[#]545 | 6765 4[#]545 :||

琴 0 4[#]7 | 3 6 - | 3 6 7 3 | 6 2 - | 6 0 0 :||

76

笛 3⁷67 673⁷ | 3⁷3⁷ 3⁷[#]1⁷ | 3⁷[#]1⁷ 3⁷3⁷ | 3⁷67 673⁷ | 3⁷3⁷ 3⁷[#]1⁷ | 3⁷[#]1⁷ 3⁷3⁷ |

琴 0 4[#]3 | 0 4[#]3 | 0 0 | 0 0 | 0 4[#]3 | 0 4[#]3 |

82

笛 3⁷67 673⁷ | 3⁷67 673⁷ | 3⁷67 673⁷ | 3⁷67 673⁷ | 3⁷67 673⁷ | 3⁷76 7663 |

琴 0 0 | 0 4[#]4 | 3 7 4 | 3 6 4 | 6 7 3 4 | 7 6 7 |

226

88

笛	<u>7663</u> <u>3776</u> <u>3776</u> <u>7663</u> <u>2323</u> <u>#4543</u> <u>#4545</u> <u>6765</u> <u>#4545</u> <u>6165</u> <u>6#165</u> <u>#4545</u>
琴	$\begin{matrix} 7^\# \\ 6^\# \\ 4^\# \\ 3^\# \end{matrix}$ - $\begin{matrix} 7^\# \\ 6^\# \\ 4^\# \\ 3^\# \end{matrix}$ - $\begin{matrix} 7^\# \\ 6^\# \\ 4^\# \\ 3^\# \end{matrix}$ 0 0 0 0 0 0 0 0

94

渐慢

笛	<u>2323</u> <u>#4543</u> <u>#4545</u> <u>6765</u> <u>#4545</u> <u>6165</u> <u>6#165</u> <u>4545</u> <u>#4 5</u> <u>4 5</u> <u>#4 5</u> <u>4 5</u>
琴	$\begin{matrix} 6 \\ 3 \\ 3 \\ 6 \end{matrix}$ $\begin{matrix} 6 \\ 3 \\ 3 \\ 6 \end{matrix}$ $\begin{matrix} 6 \\ 3 \\ 3 \\ 6 \end{matrix}$ $\begin{matrix} 6 \\ 3 \\ 3 \\ 6 \end{matrix}$ 0 0 0 0

右 左 右 左 右 左 右 左

100

$\text{♩} = 52$

笛	0 0 0 0 0 0 0 0 2. <u>35</u> 2. <u>32</u> <u>7. 2</u> <u>77635</u> -
琴	0 <u>2723</u> 2 <u>232</u> 7 <u>2723</u> 2 <u>232</u> 7 <u>2723</u> 2 <u>232</u> 7 <u>2723</u> 2 <u>232</u>

104

笛	7. <u>576</u> <u>6</u> <u>56</u> <u>7.656</u> <u>532</u> <u>4</u> <u>3</u> <u>3</u> 5. <u>756</u> <u>1</u> <u>7.1</u> <u>7176</u> <u>5.6</u> <u>7653</u> <u>6. 7 2. 35</u>
琴	7 <u>2723</u> 2 <u>232</u> 7 <u>2723</u> 2 <u>232</u> <u>73</u> <u>63</u> <u>2</u> <u>1</u> <u>5</u> - <u>55</u> <u>3 6</u> <u>532</u> <u>26.</u>

109

笛	2. <u>5 3532 1 61</u> 2. <u>3 2.</u> <u>3</u> 2 - - <u>23</u> 2 - - <u>#43</u> 2 - - -
琴	$\begin{matrix} 0737 & 3737 & 0363 & 6363 \\ 0262 & 6626 & 0626 & 2262 \end{matrix}$ 0 <u>2 6 2</u> <u>6 2 6 0</u> <u>2 0 0 0</u>

乐曲说明:

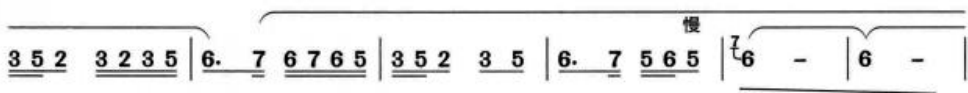
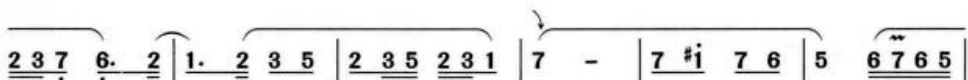
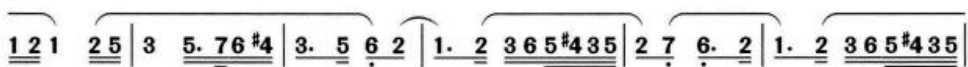
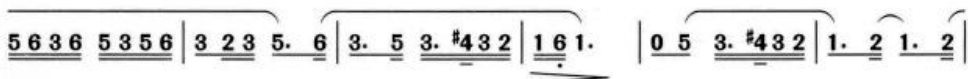
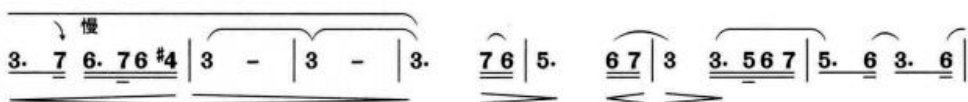
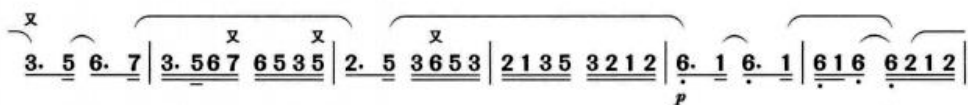
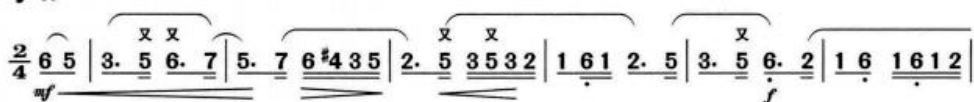
此曲根据福建南音“谱”《梅花操》的第二章“临风妍笑”创作而成,乐曲旋律委婉细腻,富有浓郁的南国情调。

第九级

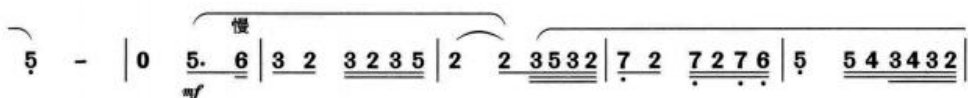
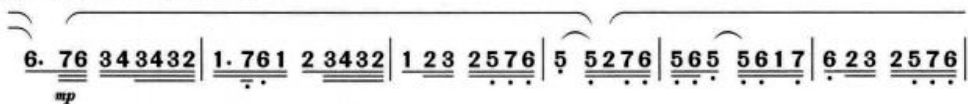
90. 双声恨

广东音乐
陆星毅移植1=^bB或C(全按作2)

♩=50



前6=后5(转全按作1) ♩=47



159

星籁——中国箫曲100首

渐慢

7̣ 2̣ 3̣ 7̣ 6̣ 6̣ | 5̣ 2̣ 3̣ | 7̣ 6̣ 1̣ | 5̣ 5̣ - | 5̣ 0 0 | 5̣ 5̣ 6̣ | 5̣ 6̣ 5̣ 0 7̣ |

2̣ - | 2̣ 0 6̣ 1̣ | 5̣ 6̣ | 5̣ 6̣ 5̣ 0 7̣ | 2̣ - | 2̣ 0 6̣ 1̣ | 5̣ 6̣ 5̣ 6̣ 7̣ |

5̣ 6̣ 5̣ 1̣ 3̣ | 2̣ 5̣ 3̣ 4̣ 3̣ 4̣ 3̣ 2̣ | 7̣ 2̣ 7̣ 6̣ 5̣ 6̣ 7̣ | 2̣ 7̣ 3̣ 2̣ 7̣ 2̣ 3̣ | 5̣ 7̣ 2̣ 3̣ 5̣ |

2̣ - | 2̣ 0 0 5̣ 4̣ 3̣ 5̣ | 2̣ 3̣ 5̣ 5̣ 4̣ 3̣ 2̣ | 1̣ 1̣ 5̣ 4̣ 3̣ 5̣ | 2̣ 3̣ 5̣ 5̣ 4̣ 3̣ 2̣ | 1̣ 3̣ 2̣ 3̣ 5̣ |

2̣ 3̣ 5̣ 5̣ 4̣ 3̣ 2̣ | 1̣ 1̣ 5̣ 4̣ 3̣ 5̣ | 2̣ 3̣ 1̣ 3̣ | 2̣ 3̣ 1̣ 2̣ 3̣ 7̣ | 6̣ 0 | 0 2̣ 7̣ |

6̣ 7̣ | 6̣ 7̣ 6̣ 7̣ 6̣ 5̣ | 4̣ 4̣ 5̣ 2̣ 4̣ | 5̣ 6̣ 7̣ 6̣ 5̣ | 4̣ 5̣ 6̣ 5̣ 4̣ | 2̣ 4̣ 1̣ 4̣ 2̣ 1̣ 2̣ 4̣ |

渐慢 前5=后6 (即转全按作2)

5̣ 6̣ 5̣ 1̣ 5̣ 4̣ | 2̣ 4̣ 1̣ 4̣ 2̣ 1̣ 2̣ 4̣ | 5̣ 6̣ 5̣ 4̣ 5̣ 4̣ | 5̣ - | 5̣ 0 0 | 7̣ 5̣ 6̣ 0 |

3̣ 5̣ 6̣ 0 | 7̣ 5̣ 6̣ 0 | 3̣ 5̣ 6̣ 0 | 7̣ 6̣ 7̣ 6̣ | 5̣ 6̣ 7̣ 6̣ 0 | 5̣ 6̣ 5̣ 6̣ |

♩ = 138

2̣ 3̣ 2̣ 3̣ 2̣ 1̣ | 6̣ 5̣ 6̣ 1̣ | 2̣ 3̣ 5̣ 2̣ 0 | 3̣ 5̣ 2̣ 3̣ 2̣ 1̣ | 6̣ 1̣ 2̣ 0 | 3̣ 5̣ 2̣ 3̣ 2̣ 1̣ |

6̣ 1̣ 2̣ 0 | 6̣ 2̣ 1̣ 2̣ | 1̣ 2̣ 1̣ 2̣ | 3̣ 5̣ 6̣ 1̣ 6̣ 5̣ 3̣ 5̣ | 2̣ 3̣ 5̣ 2̣ | 7̣ 5̣ 6̣ 7̣ 6̣ 5̣ |

160

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3 5 6 7 6 5 | 7 5 6 7 6 5 | 3 5 6 7 6 5 | 7 6 7 6 | 5 6 7 6 | 3/4 5 6 5 6 5 3 |
p *p*

2/4 2 3 2 1 | 6 6 1 | 2 3 5 2 | 3 3 2 3 2 1 | 6 1 2 1 2 | 3 5 2 3 2 1 |
mf

6 1 2 | 7 5 6 7 6 5 | 3 5 6 7 6 5 | 7 2 6 7 6 5 | 3 5 6 7 6 5 | 3 6 3 6 |
f *mp*

5 6 5 6 | 3 6 3 6 | 5 6 5 6 | 6 2 6 2 | 1 2 1 2 | 6 6 2 2 6 6 2 2 |
f *mp* *f*

1 1 2 2 1 1 2 2 | 0 0 | 7. #1 7 6 | 5 6. 5 | 3 5 2 3 5 | 6 - ||
慢 *渐慢*

乐曲说明

《双声根》源自广东音乐，有着浓郁的地方特色，乐曲创作取材于民间牛郎织女的故事。这是一首深沉缠绵又带有清新明朗的浪漫主义色彩的乐曲，充满自信与希望，表达人们冲破阻力，追求美好的生活的期盼。

演奏提示

开篇乐段为慢板，情绪色调略为暗淡，曲调哀怨缠绵，多段旋律重复，如泣如诉，深沉悱恻，凄怆之情可见一斑。演奏时注意连音线标注的气口符号和强弱表情记号。中间乐段有转调，地方韵味浓厚，曲调也转而明亮，演奏时注意控制气息，情绪变化细腻丰富。乐曲快板乐段，速度由慢渐快，带有颤音的断奏乐句与连音演奏的乐句形成对比，将乐曲不断推向高潮，曲调铿锵有力，表达了人们对封建包办婚姻的怨恨及对自由恋爱的向往。

BIOGRAPHY

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