A New Approach to the
Theory of Persian Art Music

The repertory of Persian art music together with its traditional order of classification is called radif. To understand the concept of the radif, we must first understand that the radif and the modal system are not the same thing. The radif is fundamentally a repertory of melodies that have been collected by different people and added to the repertory at different times. This repertory is not like western art music, which is composed and intended to be played exactly as written. It is made up of traditional melodies, many of which are derived from popular and folk sources; their origins have been obscured with the passage of time. We will call them «flexible melodies,» and we will discuss them at greater length below. The position of each melody in the radif is determined by its modal characteristics. The modes used in Persian art music can all be found in the radif, but are not derived from it. Thus, in the discussion to follow, we will present the radif as a repertory organized by musicians to be used both for performance and instruction. We will make a distinction between the melodies of the radif and the modal system and we will consider the two separately.
The Radif

The radif is the principal emblem and the heart of Persian music.

NurAli Borumand

The repertory of Persian melodies was first organized into the radif in the mid-nineteenth century. Even before this time musicians no doubt had their own memorized bodies of music, which they used both for teaching and performance purposes. We do not know why musicians formulated the idea of a radif at this particular time. Perhaps the notion aided them in their teaching, or perhaps the idea of a musical repertory came from the contact of musicians with western music. (Nettl 1992:4)

We do know that when the Qajars moved the capital to Tehran, and especially when Nâser al-Din Shâh, who ruled from 1848 to 1896, encouraged and protected artists, the good musicians migrated from other cities to Tehran where they were patronised by the court of the Shâh and the princes, or played at social gatherings. There was often an implicit friendly rivalry between musicians who performed at these gatherings. These occasions also provided opportunities for musicians to exchange information and knowledge about the music they knew.

The oldest radif-s that we know about come from two masters of the radif, Mirzâ Abdollâh (1843-1918) and Aqâ Hosein Qoli (died: 1913). These two brothers spent their whole lives in teaching their radif with an incredible conviction and rigor and educated the best musicians of the following generation. The students were supposed to memorize the entire repertory, therefore it was important that the radif be both complete and brief; hence, as concise as possible. Moreover, since the intention was to make the radif concise, and since different people played the same melody in different ways, the masters selected from among the versions of a melody to create their radif.

In Mirzâ Abdollâh’s radif there are about 250 pieces (gusheh-s) organized into seven large complexes (dastgâh-s) and five smaller and simpler ones (āvâz-s). This organisation is the same in all the subsequent radif-s, but the number of gusheh-s as well as the nomenclature and placement varies somewhat from one to the other. For instance, the 20th century vocal master Mahmud Karimi left us a radif with 145 gusheh-s, which is the largest number in any vocal radif. The radif of the târ and setâr (plucked long-necked lutes) has more gusheh-s because it includes all the vocal melodies as well as those just for instruments, such as Chahârmezrâb-s, Reng-s and gusheh-s of Basteh negâr, Majles afruz, and others.

Since the idea of a radif originated with a family of musicians who played the târ and setâr, the earliest radif-s are intimately linked to these instruments. Moreover, because the precise use of the mezrâb (plectrum) was very important for performance on the târ and setâr, the melodies, often derived from vocal sources and added to the repertory of these instruments, necessarily became more regularized and structured. They also took on the style of performance of those musicians, who, since they were scholars of the musical tradition and fine artists, transformed the melodies into a very elaborate and cerebral form of art music.

The creation of a radif to be used as a didactic tool and a basis for performance was a radical departure from the society of musicians of that day. Most of the masters were reticent to teach what they knew: they had gained their knowledge with difficulty and each was distinguished by his individual mastery of his repertory. The father of Mirzâ Abdollâh and Aqâ Hosein Qoli, Aqâ Ali Akbar Farâhâni, who was a great târ player, died when his sons were children. Their uncle Aqâ Gholâm Hosein, who became their father-in-law and who was also a great târ player, refused to teach them. To learn his repertory they were obliged to listen to Aqâ Gholâm Hosein from outside the door when he practiced, and in their words «to steal the pieces.»

Each gusheh has a particular name and distinct character. The origins of the gusheh-s are diverse; some of them like the gusheh-s called daramad have primarily a modal role, and I as-
sume they are derived from art music practice. Some other kinds of *gusheh*-s are basically recognized by their specific melodies. Their sources could be folk or popular music, religious occasions (such as *ta‘ziyeh*), Sufi poetry and song, music associated with the heroism; in particular descriptions of battle scenes when the *Shāhnāmeh* (Iran’s national epic poem) is performed in coffee houses in Iran, or the traditional sport *Zurkhāneh* which is accompanied by music, and so forth.

Our information about the formation and sources of the *radif* is not just hypothetical. The process of *radif* formation is ongoing: in the 20th century several new *gusheh*-s have been added to the repertory. For example, Abolhasan Sabā, master of the *radif*, composer, and influential teacher of Persian classical music in this century, included melodies from the Caspian region in such *gusheh*-s as Deylamān and Amiri, and a melody from the dervish tradition called Sadri. Mahmud Karimi added Bayāt-e Shirāz, inspired by the music of the Azerbāijani *mugam* of the same name, to Bayāt-e Esfahān. As a part of his *radif*, Hasan Kasā, a famous master of the *ney*, played music, such as the *gusheh* Hadāvandi, which he attributed to his native city of Esfahān. Abdollāh Davāmī, who was inspired by the *radif* of the *tār* and *setār*, created a vocal version of the *dastgāh* of Rāstpanjīgāh for his *radif*.

The original nineteenth century *radif* was created for performers on the *tār* and *setār*. In the twentieth century, partial *radif*-s have been created for other instruments, such as violin, *kemāncheh* (bowed lute), Santur (dulcimer), *ney* (end-blown flute). Two complete vocal *radif*-s were recorded, one by Abdollāh Davāmī and the other by his pupil Mahmud Karimi.

As Iranians started to learn about western music and western musical notation, and since the *radif* was a valuable part of the heritage of Persian music, musicians began to notate the *radif*, which had previously been preserved by memorization. The first people who notated the *radif* were Sālār Mo‘āzzez (the student and successor of the French music instructor in Iran. Alfred

Lemaire), Mehdi Qoli Hedāyat, and Ali Naqi Vaziri. The first published *radif* was the *tār* *radif* of Musā Maroufī. It was published by the Ministry of Culture and Art in 1963. In the 1970’s the *radif*-s of several masters were recorded as well. As a result of all the efforts from the time of Mirzā Abdollāh to the present to preserve and make available the melodies of the *radif*, today we have access to several versions of these melodies both recorded and notated.

**The melodies**

As I mentioned above, the melodic parts of the *radif* are made up of what I call «flexible melodies.» This notion needs further amplification here. The concept of flexible melody is very common in all kinds of music in Iran, especially with the widespread and very common unmeasured melodies, in which the rhythm depends on the meter of the poetry. When Persian poetry is recited or sung, the long or short syllables are articulated in flexible units of time. Nonetheless, the short syllables are always sustained for a shorter time than the long ones. Performances of flexible melodies vary because people have performed them many times under many different circumstances. The variations should not be considered as improvisation, but as a kind of aura each melody has, that is a part of the ethnic or group collective memory of the melody. This collective memory includes not only the melody but any poetry that goes with the melody and its historical context. This form of art is more related to traditional art than creative arts.

**The 20th century theories of Persian music**

The main intention of the creators of the *radif* was to create an organized repertory for Persian music; they were not neces-
sarily trying to give order to the modal system. Thus, the relationship of the modes to this system was not clarified and its pedagogical system included no theoretical or explicative terminology.

In the beginning of the 20th century Iran entered a period when the «west» represented the ideal model. Western music had already been taught in Iran for more than three decades; thus, a number of people in Iran had a thorough education in western music. Some of them questioned the value of Iranian music as a serious and dignified music and doubted that its teaching should be part of an institutional program of music study. Others, however, motivated in part by a spirit of nationalism, tried to revive Persian music and create a theory relating it more closely to what they regarded as a more progressive, western classical music perspective.

The first person to create a theory of Persian music was Ali Naqi Vaziri, an exceptionally energetic person with leadership ability. Indeed he was a Colonel in the army before becoming a «soldier» of Iranian music by going to Europe and studying music and returning to establish the first conservatory of Persian music in Tehran in 1923. Vaziri was an accomplished tār player and knew the radif very well. In his study of western music he encountered the western concept of modes with this background he established a Persian modal theory using the radif as the representative of the Persian modal system. According to his system, each dastāgh consisted of a scale, for which he used the French word «gamme», composed of two tetrachords separated by a whole step, the same as in a western scale. In each scale, in which the signs for half flat (koron) and half sharp (sor) are also used, the modal character of the gusheh was determined by the way each note of the melody (gusheh) functioned. For Vaziri, three scale pitches were especially important: the most repeated pitch, the variable pitch and the pitch which ended most phrases of the whole gusheh. Vaziri's theory, in which he conceived individual gusheh-s as modal genetic formulas, remains the basis of Persian modal conception to this day.

From the beginning, however, not carefully separating the concept of modes and melodies led to the confusion of both musicians and scholars about the nature of Persian music. Later on those musicians who remained faithful to the traditional melodies of the radif and those who developed a more personal and quickly attainable form of musical expression based on the modal elements tended not to associate with one another, and each group developed a certain disregard for the other. The radif players called the others motreb (someone whose musical goal was solely entertainment) and the others considered the music of the radif players scholarly, khoshk (dry), and without artistic substance.

In the past three decades both Iranian and western musicologists have initiated into Persian music by scholars, who believed the radif was the only worthwhile Persian music. As a result, musicologists doing research on Persian art music have often placed too much emphasis on the radif as a modal system. For example the musicologists tried to give a musical definition to the term gusheh by itself. It literally means «corner» and has no other meaning than a «piece» or a «part.» For Iranian musicians what specifies the identity of the piece (gusheh) is its particular name, for example, gusheh-ye Gilaki.

Twentieth century musicologists have also placed too much emphasis on separating Iranian musical styles, such as folk, popular, religious and classical or art music. But the reality is that there is a constant tension and interplay between art music and the less formal genres. As Nâyeb Asadollah, the great ney master of the 19th century said about himself, «I brought the ney from the sheep pen to the court of the Shah.» What makes this interplay more vital in the Iranian situation has been the hostility of the religious establishment to musical practice during some historical periods. The music in these periods could only have survived in contexts such as folk, religious, dervish music, or music to accompany story telling, all of which were tolerated.
It is my purpose to propose a new way to understand modes, combining the living repertory of Persian modes both in their complex organization in the radif and in their simpler and popular forms such as the tasnif. Interestingly, we can see that, although the melodies come from vocal sources and may have a basically vocal character and origin, their modal framework is very much related to the technical aspects of the stringed instruments, such as ud, kamāncheh, setār etc. Therefore, in addition to the modes commonly used in folk, popular and classical music, we will also consider the instruments used to perform them.

The fretting and tuning of stringed instruments was influential and directly connected to the development of modes. We can deduce this because stringed instruments have been used to study intervals and tetrachordes from antiquity, and because musicians in the past were first of all poet-singers, who accompanied their poetry and song with stringed instruments. The tuning of the strings and the frets guided the modal framework of the vocal phrasing. The aim in this discussion will be to show that Persian modes are based on a very solid intellectual construct. Therefore, they can be better analyzed and understood in their own terms first, before analyzing melody.

**Mode and Interval**

Persian art music uses a modal system which provides a set of modal frameworks. This system has much in common with the modal musics of this part of the world, where the main musical cultures other than that of the Persians are those of the Turks, the Arabs, and to some extent to the Indians. Two main dimensions are recognized: time and pitch. Each of them is characterized by intervals; thus, these two concepts are conceptualized separately much more than is the case in western music, for example.

The pitch intervals were part of the study of harmonic laws, and since antiquity the intervals of the octave, fifth, and fourth were recognized as invariable, or fixed, pitches. Their perfect mathematical relationship when a string is divided in 1/2, 1/3, and 1/4 also confirmed their primary role to the scientists. In Persian music the fourth is the most important interval. It is the smallest invariable interval. The usual tuning of the two melodic strings is to a fourth on the tār and setār. The third string, when it accompanies the first string as a pedal tone, is tuned to the octave of the first string, which makes a fifth with the second string. The situation of these intervals could be better understood as follows: when a fourth is inverted, it becomes a fifth and the sum of the two intervals is an octave. For example on the setār one would tune the highest string to C3 (middle C), the second to G2 (g below middle C), and the third to C2 (the octave below middle C).

**Dāng and Interval**

For the medieval scholars, such as al-Farabi, Safi ud-din and Maraghi, the tetrachord, called zolarba in Arabic and dāng in Persian, was the most important modal indicator. The tetrachord also corresponds to the physical space on the neck of instruments such as the ud, tār and setār, where the fingers can reach the notes without changing position. In medieval theories the open string (called motlac) and the names of the different fingers on the neck of the ud were used to designate the pitches used for making different sorts of tetrachords. The character of the tetrachord depends on the size of its two variable pitches (the intervals of the second and the third). Each of these tetrachords has its own unique genetic makeup.

From the performance, contemplation and analysis of Persian music and measurement of its intervals, I have arrived at the conclusion that all the Persian modes are based on only four
different sorts of dâng-s. In the following table, Chart 1, each dâng is shown by the three intervals which separate the four notes of each dâng. The measurements are in cents (based on a system where an octave is divided into 1200 cents, and each half tone is equal to 100 cents) and each dâng, encompassed by the interval of a fourth, is equal to 500 cents.

140 140 220
200 80 220
140 240 120
200 180 120

chart 1

In the table below, Chart 2, a diagram of the string names the four kinds of dâng-s. We will borrow the same nomenclature.

Open String or Motlaq

<table>
<thead>
<tr>
<th>Zâéd</th>
<th>Benser</th>
<th>Khenser</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>140</td>
<td>120</td>
</tr>
</tbody>
</table>

Chahârgâh

<table>
<thead>
<tr>
<th>Zâéd</th>
<th>Vostâ</th>
</tr>
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<tbody>
<tr>
<td>140</td>
<td>140</td>
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</tbody>
</table>

Sabbâbeh

<table>
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<th>Sabbâbeh</th>
<th>Vostâ</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>80</td>
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</tbody>
</table>

Dashti

<table>
<thead>
<tr>
<th>Sabbâbeh</th>
<th>Benser</th>
</tr>
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<tbody>
<tr>
<td>200</td>
<td>180</td>
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</tbody>
</table>

Mâhur

F. and the third dâng starting from sâbbâbeh of the C string is D, E, F, and G. (The p symbol used here stands for koron, a pitch between, for instance, Bb and B.) In this chart the most common mode (Shur) is shown on a two-stringed instrument. To complete the octave, the dâng of Shur used for the Oj (which
is basically the same as the Shur dâng on the G string), is tempered. That is, the size of all three intervals is changed slightly to conform to the fixed frets.

To show all the frets used in one octave of a Persian stringed instruments, Chart 4, below, gives the four main dâng-s and their transpositions to the sabbâbeh and khenser frets. The main dâng-s, Mâhur, Chahargâh, Dashti, and Shur, all begin with the open string. Oj and Shushtari (the name of a gusheh) would begin

<table>
<thead>
<tr>
<th></th>
<th>Zâbol of</th>
<th>Chahârgâh</th>
<th>Shushtari</th>
<th>Oj</th>
<th>Shur</th>
<th>Dashti</th>
<th>Chahârgâh</th>
<th>Mâhur</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>200</td>
<td>140</td>
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<td>220</td>
<td>240</td>
<td>220</td>
<td>200</td>
<td>200</td>
<td>120</td>
<td>200</td>
</tr>
</tbody>
</table>

chart 4

on the sabbâbeh fret, and Zâbol (another gusheh) begins on the khenser fret and requires one additional fret not used in the other dâng-s. Just as Oj is the tempered version of the shur dâng, Shushtari can be viewed as the tempered version of Chahârgâh. Zâbol is the same as the Chahârgâh.

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>Dp</th>
<th>D</th>
<th>Eb</th>
<th>Ep</th>
<th>E</th>
<th>F</th>
<th>F#</th>
<th>Gp</th>
<th>G</th>
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<td>140</td>
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<td>60</td>
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<td>60</td>
<td>60</td>
<td>120</td>
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<table>
<thead>
<tr>
<th>G</th>
<th>Ap</th>
<th>A</th>
<th>Bb</th>
<th>Bp</th>
<th>B</th>
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<td>60</td>
<td>80</td>
<td>70</td>
<td>30</td>
<td>120</td>
</tr>
</tbody>
</table>

chart 5

Chart 5 shows the actual frets on the neck of the târ from which all the above dâng-s will be derived. The frets on either side of the intervals of 60, 70 and 30 cents (Dp and D, for instance) are never used in succession in Persian music.

The interval relationships above G on the C string are the same as from open string G in the octave below.

**Tempered Intervals**

In practice the intervals are never precise. They fluctuate between those which we have called the four basic dâng-s in Chart 1 and their tempered forms in Chart 6. The more complex the system and the more the dâng-s are transposed and interact, the more intervals need to be tempered on fretted stringed instruments. But, because the intonation that results from tempering the intervals always bothers the best musicians, the frets on the târ and setâr have always remained moveable. This moveability allows the musicians to adjust them for each performance, so that the most suitable tuning is achieved for each combinations of modes. In the simple modes of folk and popular music the intervals are closer to those of the basic dâng-s. Moreover, the tempered intervals are more tolerated for example in the dâng of Mâhur than in Chahârgâh.
Mâyeh

Mâyeh is a term which does not exist in the radif system. When Persian musicians use this term among themselves it refers to a unique mode in the context of Persian art music, which is multi-modal. A western musician, looking for a Persian equivalent to the term mode, would choose the word mâyeh. Each mâyeh is made up of two dâng-s in succession. Most of the time the stress of the melodies in a given mâyeh is on the note shared by the two dâng-s. This pitch is most often the first note of the second dâng, but it can also be the second note or rarely the third. Thus, several mâyeh-s may share the same dâng-s, but be distinguished by their different stressed pitches. All together I have identified 11 different ways of arranging the dâng-s for the mâyeh-s. I have named them after the most important gusheh-s in which they appear in the radif.

Dastgâh-s and Avâz-s

When Persian, Arabic, and Turkish music is performed, modes are combined together. Mastering the art of their combinations is one of the most important aspects of performance of these art musics. In Persian music when two different mâyeh-s share a common dâng, this dâng could be used as a bridge to modulate from one mâyeh to the other. The modal stucture of each dastgâh and avâz is the combination of several mâyeh-s in a special range and order. Although these combinations are ordered in a traditional manner, they are not taught or defined with any modal terminology, but by their specific melodies (gusheh-s), which match each step in the modal progression.

What follows will be the charts of all the modal structures on which all the dastgâh-s and avâz-s in the radif rely. The dastgâh-s are Shur, Navâ, Segâh, Chahârgâh, Homâyun, Mâhur and Râstpanîgâh. The avâz-s are Abuatâ, Afshârî, Bayât-e Tork, Dashti and Esfehân. Bayât-e Kord is also played independently like an avâz, but in the radif it is not counted as an independent avâz; thus, the total number remains 12 (seven dastgâh-s and five avâz-s).

Description of the charts:

What follows is a series of charts showing the dâng-s (tetrachords) and mâyeh-s (modes) and their position in each dastgâh.

1. The vertical keyboard at the left of each chart shows the widest range (six dâng-s) used for Persian music. The conventional pitches chosen for notation of the radif of the tûr and sehtar.
are used in these charts. In practice the instruments can be tuned as much as a fourth lower (but not higher) than the conventional pitches.

2. The numbers along the bottom of the charts show the different components of the dastgāh structure. These numbers will be referred to in the comments.

3. Because the position of the mayeh-s and their relation to the open strings is important, the dastgāh-s are presented from the position used in the oldest radif, that of Mirzâ Abdollah. The horizontal lines designate the tuning of the open strings of the târ or setâr for each dastgāh. Thus the tuning in Shur, for instance, is f, g, and c.

4. In the vertical keyboard, when the bottom line of a pitch is thicker, this pitch is the stressed pitch in one of the sections of the dastgāh.

5. Two dâng-s combined to form a mayeh share a common pitch (except for the mayeh-s of Delkesh and Râk). This pitch is designated as a square between the two dâng-s in the charts. In Persian music when an instrument does not have the high range of a melody, the pitches that are too high would ordinarily be transposed to the octave below. This means that position of the two dâng-s of the mayeh would be reversed (i.e., the higher would be played an octave lower). To better show the relationship of the mayeh-s in the dastgāh, in the following charts the position of the dâng-s for all the mayeh-s are shown in the position where they share a pitch. But dâng-s designated +8 are played an octave higher in the dastgāh of Mâhur in numbers 3 and 6 and in the dastgāh of Chahârâbâgh in number 2.

6. The mayeh of Oj is shown throughout with the higher dâng only one tone higher than the one to its left instead of stacked vertically. In shur, for instance, Oj appears in steps 6 and 11.

7. The names of the gusheh-s listed below each chart are not all the gusheh-s in any given mayeh, but the most important gusheh-s, which have a significant and distinguished modal character.

Bibliography:


راست پنجگاه
RASTPANJGAH

ماهور
MAHUR

1. راست
2. 'اراق (the same function as Oj)
3. 'اراق a Nahib
4. Panjgah a Rubafza
5. 4. Odshational
6. Sepehr
7. Bayat-e Ajam a Qarcheh
8. Tarza a Abolchap
9. Noruz-e Arab a Mavara ol-Nahr
10. 11, 12, 13, 14 a 15. Farang (15 Forud)
(* The asterisks enclose an octave.)

The lower C string serves primarily as a pedal
tone (vakhtun) and the two other strings are the
melody strings.

1. Daramad of Mahur
2. Hesar Mahur (or Pas Mahur) 3. Delkesh
4. Shekasteh 5. 'Arq
6. Râk 7. Râk a Esfedânak
8. a 9. Safar-e Râk a Ashur
10. Saiq Nameh
11. Koosh te
12. Sufi Nameh
The lower C string serves primarily as a pedal tone (vakhun) and the two other strings are the melody strings.

1. Darâmad of Chahârgâh (The stressed pitch is C.)
2. Žâbol (The stressed pitch is E.)
3. Hesâ (C, D from number 3 and Ep, F, G from number 4 The stressed pitch is Ep.)
4. Mokhâlîf (C, Dp from number 2 and Ep, F, G from number 4 The stressed pitch is F.)
5. Maghâb
6. Raḥāb a Masâhi
7. 7. Shâh Khâtyâyî

(*) The asterisks enclose an octave.

1 and 2. Darâmad of Segâh
2. Sâbol (The stressed pitch is C.)
3. Muyeh (The stressed pitches are Dp and Eb.)
4. Hesâr (C, D from number 3 and Ep, F, G from number 4 The stressed pitch is Ep.)
5. Mokhâlîf (C, Dp from number 2 and Ep, F, G from number 4 The stressed pitch is F.)

(*) The asterisks enclose an octave.
1. Darâmâd of Navâ
1. Bayât-e Râjeh (The stressed pitch is A.)
2. Naboft
3. Ashirân
4. Gaveht
5. Khojasteh
5. & 7. Hosain
8. Busalik

1. 2 & 3. Afshâri
4 & 5 'Arâq
Abu’ata

Bayat-e Tork

1. Abu’ata
2. Hejaz
3. Ruh ol-arvâh
4. Mehrbâni
5. Shekasteh

1 & 2. Bayat-e Tork
1. Ruh ol-arvâh
2. Mehrbâni
3 & 4. Shekasteh
پیات کرد

BAYAT-E KORD

دشتی

DASHTI

1 & 2. Bayat-e Kord
3 & 4. Oj

1 & 2. Dashti
5 & 6. Oj
1. Darāmad of Shur
2. Oj
3. Salmak
4. Bozorg
5 & 6. 'Ozzal
7. Darāmad of Shur-e Pāyin Dasteh
8 & 9. Shahnāz, Qaracheh & Razavi
10 & 11. Oj in Shahrāshub

(* The asterisks enclose an octave.)