

Wade, Bonnie. Excerpts of *Music in India: The Classical Traditions* New York: Prentice-Hall, 1979; reprinted Riverdale/Simon and Schuster, 1987; second edition, Manohar, 1997.

## FIVE METER

The second basic element of Indian classical music to be discussed is meter. The Sanskrit word for meter is *tāla* (called *tāl* in North India and *tāla* or *tālam* in South India). The word refers both to the metric system as a whole and to individual meters.

### *HINDUSTĀNĪ METRIC CONCEPTS*

On the next pages we will contrast Western and Hindustānī concepts in parallel fashion, using “Till the End of Time” as the Western example and the Hindustānī *chhotā khyāl* (a vocal genre discussed in Chapter Seven) *chiz* “Pāyaliyā jhankār.” Following this discussion we will examine Karnatak metric concepts.

## Western

## EXAMPLE 5-1 "Till the End of Time"

Chorus

Till the end of time, Long as stars are in the blue — Long as there's a spring, a bird to sing I'll go on lov-ing you — Till the end of time, — Long as ros-es bloom in May — My love for you will grow deep-er with eve-ry pass-ing day.

"Till the End of Time" is in a certain meter. "Frère Jacques" happens to be in the same meter. That meter, signified by the time signature 4/4, is defined by the events in a single unit—a measure. A measure in 4/4 contains four beats, each having the value of a quarter note ( $\frac{1}{4}$ ). In standard Western notation, barlines mark off the measures. Since "Till the End of Time" does not begin on the first count of the meter, the measure preceding the first barline is incomplete.

Meters also imply a pattern of stress. In 4/4, the first beat is the strongest, the third beat is the next strongest, and the second and fourth beats are "offbeats":



Other examples of meter are 3/4, which implies a stress pattern of  $\frac{1}{4}$   $\frac{1}{4}$   $\frac{1}{4}$  or  $\frac{1}{2}$   $\frac{1}{4}$ . A 6/8 grouping of six eighth notes ( $\frac{1}{8}$ ), half the value of a quarter note ( $\frac{1}{4}$ ), is subdivided 3 + 3:  $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$   $\frac{1}{8}$ . Different meters are used for different types of music, particularly varieties of dance: 3/4 for a waltz, 4/4 for a march, and so forth.

"Till the End of Time" by Buddy Kaye and Ted Mossman. Copyright © 1945 by Santly-Joy, Inc. Copyright renewed, assigned to Chappell & Co., Inc. and Budd Music Corp. International Copyright Secured. ALL RIGHTS RESERVED. Used by permission.

## Hindustānī

EXAMPLE 5-2 "Pāyaliyā jhankār"<sup>1</sup>

Rāg Pūriyā Dhanashrī, Tīntāl

Sthāi

Pā - ya - li - yā jha - n - kā - - r mo - ri  
jha - na - na jha - na - na bā je jha - n - kā - rī /  
Pi - yā sa - m - jhā - unī sa - m - jha - t na - hīn  
sā - s na - na - d mo - rī de - gi gā ri. /

"Pāyaliyā jhankār" is in a certain tāla. That tāla, signified by the name *tīntāl*, is defined by the events in a single unit—a cycle. A cycle in *tīntāl* contains a total of sixteen counts (here notated as 16  $\frac{1}{4}$ s), I have chosen to put a barline at the end of each cycle in the notation above. The double bar in line two of the song indicates the beginning of the second section (*āntarā*) of the song, not the beginning of a new tāla cycle. Since the song does not begin on the first count of the meter, the measure preceding the first barline is incomplete.

Tāla structures also include an internal pattern of durations. In *tīntāl*, there are four sections (four *vibhāg*) with four counts (four *mātrās*) in each section: 4 + 4 + 4 + 4 counts. The counts that begin each segment delineate the pattern of durations and thus are important structural counts. In *tīntāl*, those counts are 1, 5, 9, and 13:



<sup>1</sup>This song appears in Indian notation in V. N. Bhaṭkande, comp., and L. N. Garg, ed., *Krāmik Pustak Mālikā*, 2nd ed. (Hathras: Saṅgīt Karyalaya, 1963), Vol. IV, p. 348. B. D. Yadav has translated the text of the song as follows (see Bonnie C. Wade, *Khyāl: A Study in Hindustānī Classical Vocal Music* [Ann Arbor, Mich.: University Microfilms, 1971], Vol. I, p. 496):

Sthāi: My anklets jingle jhanana jhanana.

Āntarā: I cannot make my beloved understand and my mother- and sister-in-law abuse me.





*Western*

If a Western melody begins on any beat other than the first beat (the downbeat) of a measure, we feel it is necessary, at least in notation, to complete that first incomplete measure. We do this by lessening the number of beats in the last measure. "Till the End of Time" begins on a beat 3, so we notate the final measure with only two beats. If one sings this melody casually, however, the final pitch would probably not end precisely at the end of the second beat. So which is the beat of finality? Do we Westerners in fact concern ourselves with the beat of finality? Certainly it is not stressed in our music theory as much as the final pitch and final chord.

*Speed*

In Western classical music, the speed at which a composition is to be performed is specified in relative terms or in specific terms—or both. Terms such as "largo," "allegro", and "vivace" are relative, whereas metronome markings are specific. The relative speeds are numerous—largo, adagio, moderato, allegro, vivace, presto, and so on.

Variations of the established speed are achieved by slowing it (*ritardando*), gradually quickening it (*accelerando*), or varying it at will (*rubato*). These devices are either indicated in the notated score or are employed by the performer or conductor in his or her interpretation of the piece.

*Hindustānī*

If a section of a Hindustānī melody begins on any count other than the first count of a cycle, it is necessary to complete that first incomplete cycle. The *sthāi* of "Pāyaliyā jhankār" begins on count 9 and ends on count 8, as does the *āntarā*.

In Hindustānī music, that final count 8 could not be a cadence point for the melody as a whole, however. Count 1 of the next cycle of the *tāla* must be the count of finality. One accomplishes this by repeating the portion of the initial line of the melody that leads up to and includes count 1. In "Pāyaliyā jhankār," counts 9 to 1 (the counts corresponding to the words "Pāyaliyā jhankār") are repeated. The performer can go beyond count 1 to finish a text phrase, but that count 1 marks the "official" end of the melodic-rhythmic phrase. Thus, the beginning of the song is used as an ending; the first count of a *tāla* cycle serves both as a beginning and as an ending. This is an important characteristic of musical structure in Hindustānī classical music.

*Speed*

In Indian classical music, the speed at which a composition is performed is specified in relative terms. Formerly, it was measured in terms of the heartbeat, but even that was relative. The relative speeds in the Hindustānī system are conceptualized as in levels: slow, medium, and fast.

Variation of the established speed is achieved in Hindustānī music by two principal methods. One is to accelerate the *tāla* counts. At the beginning of a "slow performance," for example, a cycle of 16 counts may take 32 seconds to complete. As the performance progresses and the speed increases, that cycle may take only 20 seconds. The means of achieving this acceleration vary. It has been found that in some performances of *khyāl* (a vocal genre), the acceleration takes place very subtly and gradually throughout the melodic phrases sung by the soloist.<sup>2</sup> In other performances, the vocalist increases the speed only at the beginning of a *tāla* cycle; other vocalists apparently direct the accompanying drummer to increase the rate of his beats while the soloist pauses for a cycle or two to rest.

The second method of varying the established speed does not actually change the speed of the counts. Rather, it changes the rhythmic density. For example, ♩ ♩ ♩ ♩ (at MM ♩ = 48) becomes twice as dense when each count is subdivided as follows: ♪♪ ♪♪ ♪♪ ♪♪. The basic speed has not changed.

<sup>2</sup>Wade, *Khyāl: A Study in Hindustānī Classical Vocal Music*, Vol. I, p. 273.



A Karnatak tāla also consists of a cycle, but the principles of organization of the cycles are somewhat different in Karnatak tālas than they are in Hindustānī tālas. In Karnatak music, some tālas consist of one single unit without subdivision; most are subdivided, however.

The Karnatak idea about subdivisions (a subdivision is called an *āṅga*) is different from the Hindustānī notion. In Hindustānī tāla, the terms *tālī* and *khālī* refer to the single beats that mark the subdivisions of a tāla cycle: "In *tintāl*, count 9 is *khālī*." One could also say, "There are three *tālī* counts in *tintāl*," but the term "*tālī*" does not refer specifically to a subdivision of 4 counts of duration. No indication is given by the terms *tālī* and *khālī* themselves of how many counts the subdivision includes. In Karnatak practice, the terms used in speaking about subdivisions of a tāla cycle refer not only to the initial count of a subdivision but also to the duration of the subdivision as a whole.

In the major Karnatak tālas, there are three types of subdivision. Their count values and symbols in notation are as follows:

Anudrutam	1 count	U
Drutam	2 counts	0
Laghu	Variable number of counts	<sup>n</sup>

In order to specify the number of counts in a *laghu*, one needs another term. The terms used are simply numbers: 3 (*tiśra*), 4 (*chaturaśra*), and so on. The *jāti* (types of *laghu*) permitted in the system are these:<sup>3</sup>

Laghu of 3 counts	tiśra jāti	<sup>3</sup>
Laghu of 4 counts	chaturaśra jāti	<sup>4</sup>
Laghu of 5 counts	khaṇḍa jāti	<sup>5</sup>
Laghu of 7 counts	miśra jāti	<sup>7</sup>
Laghu of 9 counts	sankīrṇa jāti	<sup>9</sup>

Tāla cycles consist of varying combinations of *anudrutam*, *drutam*, and *laghu*. The basic form of *tripuṭa tāla*, for example, is *laghu* plus *drutam* plus *drutam*, notated |<sup>n</sup> 0 0. This is only a skeletal outline of *tripuṭa tāla*;

<sup>3</sup>Āṅgas of 8, 12, and 16 *akṣaras* (counts, like the Hindustānī *mātrās*) occur in the medieval tālas as they are interpreted in the South. Lengths of 6, 10, 13, 14, and 15 are included in the theory but almost never used. (Robert Brown, *The Mṛdaṅga: A Study of Drumming in South India* [Ann Arbor, Mich.: University Microfilms, 1965], Vol. I, p. 7.

five types of this tāla are available in the system because of the variable values of the *laghu*:

Tripuṭa tāla tiśra jāti	<sup>3</sup> 0 0 3 + 2 + 2	7 counts
Tripuṭa tāla caturaśra jāti	<sup>4</sup> 0 0 4 + 2 + 2	8 counts
Tripuṭa tāla khaṇḍa jāti	<sup>5</sup> 0 0 5 + 2 + 2	9 counts
Tripuṭa tāla miśra jāti	<sup>7</sup> 0 0 7 + 2 + 2	11 counts
Tripuṭa tāla sankīrṇa jāti	<sup>9</sup> 0 0 9 + 2 + 2	13 counts

The Hindustānī system presents a remarkable contrast: it has only one type of *tintāl*, one type of *ektāl*, one type of *rūpak tāl*, one type of any tāla. Each Hindustānī tāla is a discrete entity, not organized into any system.

As with Hindustānī tāla, however, the subdivisions in a Karnatak tāla structure, however they are conceived, do not imply stress. The whole emphasis is on counts falling at regular and theoretically exact intervals.<sup>4</sup>

In Chart 11, the traditional Karnatak tāla system can be seen in one clear sweep. Seven tāla structures (including *tripuṭa*) form a core repertoire; there are five types of each of these structures.<sup>5</sup> The seven tālas are listed vertically in the far left column; the types of *laghu* are listed across the top. Note that when a tāla includes more than one *laghu*, all the *laghu* have the same number of counts. Wavy lines inside the appropriate boxes indicate the tālas that are actually used today. (Karnatak theoretical tāla classification, like Karnatak *rāga* classification, includes what *could* be used as well as what is used.

The most widely used tāla at present is *tripuṭa tāla caturaśra jāti*, otherwise known as *Ādi tāla*. It has a cycle of 8 counts (or *akṣaras*), and an even rather than an odd number of counts in the *laghu*: |<sup>4</sup> 0 0 (4 + 2 + 2). Many references to *Ādi tāla*, however, speak of 4 counts—2 + 1 + 1—and then calculate half counts (called *mātrā*).<sup>6</sup>

<sup>4</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 129.

<sup>5</sup>The tālas are used for *kṛitī* and the other prominent musical forms, such as *pāḍam*, *tillānā*, and *varṇam*, that make up the majority of compositions on a concert program. See Chapter Eight for a discussion of these forms. Numerous tālas other than those in this system exist. They are used widely for other forms.

<sup>6</sup>There is considerable confusion regarding the value of a *mātrā*. According to P. Sambamoorthy, for example, one *mātrā* equals four *akṣhāras* (*South Indian Music*, 5th ed. [Madras: Indian Music Publishing House, 1958], III, 110.) A recent doctoral dissertation on Hindustānī tālas explains that the Karnatak *mātrā* is of varying length—either one or two *akṣaras* (Rebecca Stewart, *The Tablā in Perspective* [Ann Arbor, Mich.: University Microfilms, 1974], p. 78). In any case, the *mātrā* value seems to depend on whether it is considered a component in the *drutam*, *anudrutam*, or *laghu*.

TĀLAS ↓	JĀTIS→ 4 CATU- RAŚRA	3 TĪŚRA	7 MĪŚRA	5 KHAṆḌA	9 SANKĪRṆA
Dhruva	<sup>4</sup> 0   <sup>4</sup>   <sup>4</sup>	<sup>3</sup> 0   <sup>3</sup>   <sup>3</sup>	<sup>7</sup> 0   <sup>7</sup>   <sup>7</sup>	<sup>5</sup> 0   <sup>5</sup>   <sup>5</sup>	<sup>9</sup> 0   <sup>9</sup>   <sup>9</sup>
Naṭya	<sup>4</sup> 0   <sup>4</sup>	<sup>3</sup> 0   <sup>3</sup>	<sup>7</sup> 0   <sup>7</sup>	<sup>5</sup> 0   <sup>5</sup>	<sup>9</sup> 0   <sup>9</sup>
Rūpaka	0   <sup>4</sup>	0   <sup>3</sup>	0   <sup>7</sup>	0   <sup>5</sup>	0   <sup>9</sup>
Tripuṭa	<sup>4</sup> 0 0	<sup>3</sup> 0 0	<sup>7</sup> 0 0	<sup>5</sup> 0 0	<sup>9</sup> 0 0
Jhampa	<sup>4</sup> U 0	<sup>3</sup> U 0	<sup>7</sup> U 0	<sup>5</sup> U 0	<sup>9</sup> U 0
Aṭa	<sup>4</sup>   <sup>4</sup> 0 0	<sup>3</sup>   <sup>3</sup> 0 0	<sup>7</sup>   <sup>7</sup> 0 0	<sup>5</sup>   <sup>5</sup> 0 0	<sup>9</sup>   <sup>9</sup> 0 0
Eka	<sup>4</sup>	<sup>3</sup>	<sup>7</sup>	<sup>5</sup>	<sup>9</sup>

CHART 11. The Karnatak Tāla System

A smaller but nevertheless important group of tālas are also used frequently in South Indian music—the *cāpu tālas*, particularly *miśra cāpu* (7 counts) and *khaṇḍa cāpu* (sometimes called Jhampa: 5 counts). “They are of characteristically quick movement and are said to derive from folk music. Each consists of two āngas, a shorter one plus a longer one in asymmetrical relationship, Miśra Cāpu being 3 + 4 and Khaṇḍa Cāpu 2 + 3.”<sup>7</sup> These tālas are not thought of as being structured by anudrutam, drutam, or laghu.

Even more noticeably than audiences in the North, South Indian audiences keep the tāla during performances. The means of keeping it (*kriya*) is by claps and waves, which are applied to the tāla in the following manner:

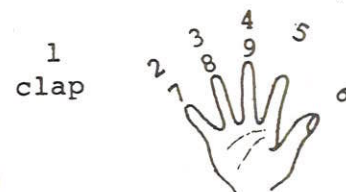
Āṅga	Symbol	Kriya	Notation Symbols
Anudrutam	U	clap	+
Drutam	0	clap and wave	+ o
Laghu	<sup>n</sup>	clap plus finger counts	+ plus finger counts

To indicate the finger counts of the laghu, one touches the thumb to the little finger and progresses toward the index finger. Thus, Ādi tāla would be kept as follows:

<sup>7</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 12.

Counts:	1	2	3	4	5	6	7	8
Tāla:	<sup>4</sup>				o		o	
Kriya:	+				+	o	+	o
	clap	little finger	ring finger	middle finger	clap	wave	clap	wave

Laghus with 7 or 9 counts are indicated in the following manner:



When a singer keeps tāla, he usually hits his right hand on his right thigh for a handclap (which is convenient because he is seated cross-legged), and either waves or hits his thigh with palm turned upward for a wave.

For comparative purposes, the terminology for Hindustāni and Karnatak tāla is given in Chart 12.

	KARNATAK	HINDUSTĀNĪ
One cycle of the tāla	āvarta	āvarta
A subdivision of the āvarta	āṅga	vibhāg
Types of āṅga:		
One count	anudrutam	
Two counts	drutam	
Variable finger counts	laghu	
Type of laghu	jāti	
Counts marking off the beginning of vibhāg:		
Clapped		tāli
Shown by silent wave		khāli
Count 1 of a tāla cycle	sama	sam
A single count	akṣara	mātrā
A half count	mātrā	
Subdivisions of a single count:		
Duple	dvikāla	dugun
Quadruple	chatuskāla	chaugun
Hand motions to “keep tāla”	kriya	kriya*
Speed	kāla/laya	laya
Slow	vilambita/cauka	vilambit
Medium	madhya	madhya
Fast	druta	drut
*Most practicing musicians call this “tāli.”		

CHART 12. Hindustāni and Karnatak Tāla Terminology



In Karnatak music, as in Hindustānī music, a single cycle can be sufficiently long to accommodate a complete musical idea. However, two or more cycles are often combined into a longer phrase. The completion of a phrase is usually signaled by a recurring melodic phrase, as in Hindustānī music. That phrase always appears at the same place in the tāla cycle and thus marks an important structural point in the tāla.

In Karnatak music, this important structural point is one of two such points in the tāla cycle. This point—the count in the tāla cycle on which a piece, a new section of a piece, or a main phrase of a piece begins—is named *eḍuppu* (a Tamil word) or *graha* (a Sanskrit word). The tāla count on which *eḍuppu* falls depends on the composition. In the kriti in Examples 8-2 and 8-3, for instance, *eḍuppu* is a half count past count 1. Completion of melodic phrases, even in improvisation that is based on a composition, is marked by the repetition of a particular melodic phrase, beginning at *eḍuppu*. Thus, *eḍuppu* is an important place for rhythmic cadences.<sup>8</sup>

The second important structural point in the tāla cycle is inherent in the tāla itself: it is count 1, called *sam* or *sama*. In Karnatak music, count 1 does not consistently receive special emphasis as an ending point of melodic phrases (due to the importance of *eḍuppu*), but the ultimate cadence realized by the drummer is almost always on *sama*.

Cadences at count 1 in Hindustānī performances indicate the beginning of a new tāla cycle. In Karnatak pieces, however, since cadences can come on any beat, it is more difficult (particularly in even tālas like Ādi tāla) to find your place unless you know the composition. The widespread custom of audience participation through keeping the tāla is testimony to the high level of musical education on the part of the audience.

As in North India, relative speeds in Karnatak music are conceptualized as in levels: slow, medium, and fast. The terms for these are practically the same in both cases: *vilambita* (Hindustānī *vilambit*) or *cauka*, *madhya*, and *druta* (Hindustānī *drut*), respectively.

One basic difference between Karnatak and Hindustānī performance practice is in regard to speed (called *kāla* or *laya* in Karnatak practice, *laya* in Hindustānī practice). In Karnatak music, once the basic speed is established, acceleration of the tāla counts is *not permissible*. Since the audience is keeping tāla, any acceleration will be noticeable immediately. Slight fluctuations in speed do occur in practice, of course, but theory demands that they be slight. An increase in speed is achieved instead by an increase in the rhythmic density:

A favorite procedure in South India is to present a melodic or rhythmic pattern (sometimes a very long one, an entire composition or major section thereof) and then double it in speed while the *tāla* continues in constant pace.

<sup>8</sup>*Ibid.*, p. 336.

The same procedure can be followed with speeds four times as fast, or sometimes three times as fast, half as fast, etcetera. In all cases the interest derives from the interplay between the pattern of melody and rhythm and the pattern of the *tāla* as they change in relationship. The two most common doublings are a speed twice as fast (*dvikāla*) and a speed four times as fast (*catuskāla*). A *trikāla* pattern goes through the three stages of presentation: in first speed, then in *dvikāla* and *catuskāla* relationships.<sup>9</sup>

Meter and rhythm in Indian classical music are best discussed in connection with the instruments and performance practices that utilize them. Chapter Six continues the discussion of tāla by focusing on percussion instruments and drumming practice in light of the metric concepts presented in this chapter.

## RHYTHM INSTRUMENTS AND DRUMMING

### GHANA AND AVANĀḌḌHA VĀDYA: IDIOPHONES AND MEMBRANOPHONES

The two categories in the ancient classification system for musical instruments that pertain here are *ghana* and *avanāḍḍha*. *Ghana vādyā* (*ghana*: “to beat or strike”; “a strike or blow”) are idiophones, instruments that are struck against each other, or, more widely defined, instruments whose sound is created by the vibrating body itself.<sup>1</sup> *Avanāḍḍha vādyā* are instruments to

<sup>1</sup>S. Krishnaswamy, *Musical Instruments of India* (Delhi: Government of India Press, 1965), p. 21. B. C. Deva, in *Indian Music* (New Delhi: Indian Council for Cultural Relations, 1974), p. 99, explains *ghana vādyā* as the “solid” instruments, from the Hindi घन : “solid,” “bell,” “gong.” Claudie Marcel-DuBois, in *Les Instruments de musique de l’Inde ancienne* (Paris: Presses Universitaires de France, 1941), p. 25, translates *ghana* as “metal” and comments that the difference between the ancient Indian system and our modern one is that *ghana vādyā* idiophones included only metal types. It would appear that her interpretation is incorrect.

which a skin is attached—in modern terminology, membranophones. Both categories comprise primarily percussion instruments. Percussion instruments seem to have always been varied and numerous in Indian musical history. Drums, cymbals, gongs, and bells constitute the catalogue of rhythm instruments, with drums the most prominent. With one exception, the drums used in North and South Indian classical music today are very different. The exception is the *mṛdaṅga* of the South and the similar *pakhāvaj* of the North.

*Mṛdaṅga*, the dominant drum in Karnatak music, is one of the most ancient of the Indian drums. It is said to have been invented by Brahma to accompany the dancing of Lord Shiva, and to have first been played by Ganesha, the elephant-headed son of Shiva.<sup>2</sup> Since the word “*mṛdaṅga*” means “made of clay,” the instrument must originally have been a pottery drum, but for many centuries now it has been made of wood. Carved from a jackfruit log, it is barrel-shaped on the outside. On the inside, the bore toward the two ends is slightly conical. The *mṛdaṅga* is made in two main sizes, one approximately twenty-five inches long and sounding within the approximate pitch area of *Ṣa* to *Re* (C to D below middle C) and the other approximately twenty-three inches long and sounding in the pitch area of *Ma* to *Pa* (F to G below Middle C). The former is for accompanying male voices, the latter for accompanying female voices, a *viṇā*, or a bamboo flute.<sup>3</sup>

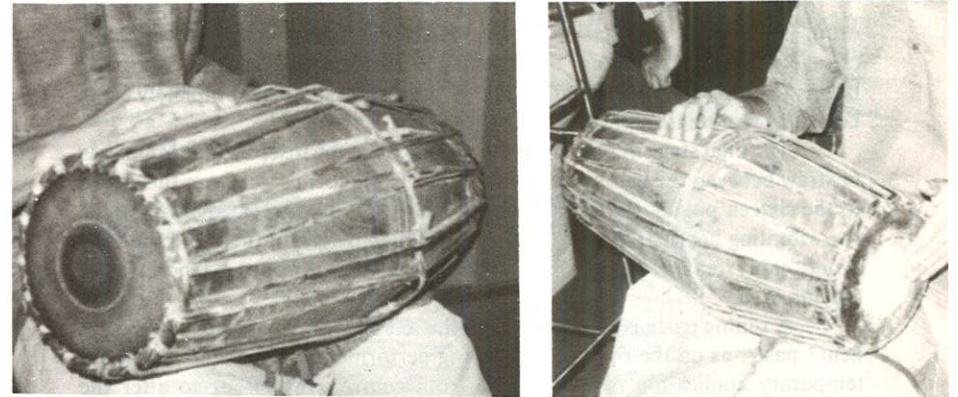


Plate 19  
The *Mṛdaṅga*

<sup>2</sup>H. A. Popley, *The Music of India*, 3rd ed. (New Delhi: Y.M.C.A. Publishing House, 1966), p. 123. “*Mṛdaṅga*” is the Sanskrit word. Often, it appears in Dravidianized form as “*mṛdaṅgam*” or “*mridangam*.”

<sup>3</sup>Robert Brown, *The Mṛdaṅga: A Study of Drumming in South India* (Ann Arbor, Mich.: University Microfilms, 1974), Vol. I, p. 19. For more information on the construction of the *mṛdaṅga*, see Chapter Two of this source. According to Brown, p. 20, a lowering in the standard pitch area has taken place since 1925 or 1935, perhaps because of the popularity of a male singer, Ariyakudi Ramanuja Ayyangar, who was a bass.



The *mṛdaṅga* has a playing head at each end. Each head is composite; that is, each is made of several layers of skin. The design of the heads, which is extremely complex, is meant to provide maximum clarity, variety, and controllability of tone. The several layers are of cowhide and goatskin. A rim of buffalo thong is braided around the edge of each head. This rim provides an anchor for extremely high tension: buffalo-hide lacing is pulled through it at sixteen points and stretched in a V pattern over the body from head to head.<sup>4</sup>

The preparation of the right-hand head once it is lashed to the drum demands great skill on the part of the maker.

First, the center hole of the outer skin . . . must be enlarged to fit the required basic pitch of the instrument. This is done by inserting a metal plate between the skins and cutting the top one with a knife. . . . After the hole has been properly cut, the surface of the second skin, which shows through the hole, is again scraped. A thin layer of plain well-boiled rice is applied as adhesive and allowed to dry in the sun. It must be used soon after it is prepared, and it provides the base for the application of the black tuning mixture. This tuning mixture is now applied to the second skin through the hole, giving the head a clear and pleasant musical pitch, and putting the tonic and first partial of the drum into perfect octave relationship to one another.<sup>5</sup>

The paste on the right head may last for weeks or even months if the drum is not used constantly. Most professional drummers, however, must change instruments at least once during a performance because the paste begins to chip, affecting the tone. The skin must be scraped completely clean before new paste is applied.<sup>6</sup>

The final stage in preparing the right head is the insertion of thin pieces of straw between the first and second heads. These form radii from the center to the sixteen points where the thong is lashed to the edge of the head. The two vibrating heads are thereby kept from touching each other, and the tone is noticeably improved. The straws are broken off so as not to extend into the playing area.

A tuning paste is also applied to the left head, but it is not a "permanent" paste, as on the right head. During performance, the drummer uses a temporary application of paste made from coarse wheat flour to alter the quality and pitch of the tone.<sup>7</sup> A further means of controlling the tension of the heads, and therefore the basic pitch, is to wedge blocks of wood between the thong braces and the walls of the instrument.

Several distinctly different sounds are possible on the *mṛdaṅga*. The heads may be hit on the ring of the top skin, on the tuning-paste spot of the

<sup>4</sup>*Ibid.*, p. 33.

<sup>5</sup>*Ibid.*, p. 36.

<sup>6</sup>*Ibid.*, p. 41.

<sup>7</sup>*Ibid.*, p. 26.

second skin, or on both places at once. One, two, or three fingers and even the palm may be used in these different places. Damped or undamped sounds are possible. A very clear musical pitch, its octave, or a pitch a half step above the basic pitch can be produced.<sup>8</sup>

The *mṛdaṅga* occupies a peculiar position in South Indian culture:

The repair and manufacture of *mṛdaṅgas* is a highly skilled craft requiring long training and experience, but because it involves the handling of dead animal material it is pursued only by persons of low caste. It is indicative of the supreme cultural prestige and antiquity of the instrument that a large number of the famous performers of the past and present are Brahmans. Its use requires not only constant manual contact with animal hide, but with the skin of a butchered cow. Drummers know how to make only minor repairs on their instruments and most frequently bring them to the professional specialist for care. . . . Although his social position is an inferior and servile one, he has the innate dignity of the skilled and indispensable craftsman.<sup>9</sup>

*Mṛdaṅga* artists of note include T. Ranganathan and Trichy S. Shankaran. Especially notable is Palghat Mani Iyer.

The northern *Pakhāvaj* is the same type of instrument as the *mṛdaṅga*, and is very similar to it. Indeed, it is sometimes called *mṛdaṅg* in the North. The *pakhāvaj* is a modified barrel-shaped drum, constructed in various sizes: "Its dimensions fluctuate from approximately 66 to 76 cm in length, and from 20 to 30 cm in diameter at its greatest girth, an asymmetrically placed point which is between 2½ and 5 cm closer to the *bāyān* [left] end than the *dāhinā* [right]. The presence of this point places the *pakhāvaj* somewhere between a double cone and a barrel. . . ."<sup>10</sup>

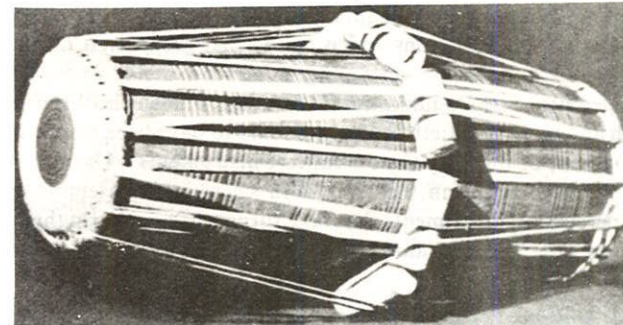


Plate 20  
The *Pakhāvaj*

<sup>8</sup>*Ibid.*, p. 45.

<sup>9</sup>*Ibid.*, pp. 22-23.

<sup>10</sup>Rebecca Stewart, *The Tablā in Perspective*. (Ann Arbor, Mich.: University Microfilms, 1974) p. 11.



The design of the heads on the pakhāvaj is slightly different: the outer layer of skin is cut away more than on the mṛdaṅga. This leaves more of the surface of the second layer exposed and makes the playing area wider. This difference apparently lowers the degree to which the higher partials are damped on the pakhāvaj, and its pitch is therefore not as clear as that of the mṛdaṅga.<sup>11</sup> The *dāhinā* (right) head is from 16½ to 19 centimeters in diameter, the *bāyān* (left) head from 25½ to 28 centimeters. A wheat-flour paste (*ātā*) is placed on the pakhāvaj *bāyān* head prior to each performance.<sup>12</sup>

The quality of the leather on the heads of the pakhāvaj and mṛdaṅga is also different, as is the tensions on their surfaces. The cylindrical blocks of wood between the leather braces and the body of the pakhāvaj are bigger than those on the Karnatak instrument. Some of the playing techniques differ as well.

The name “pakhāvaj” may have been derived from the *āvaj*, a drum used in Mughal courts. In the memoirs of the emperor Akbar, the *āvaj* is described as “two kettle drums joined together at the reverse ends, their heads covered with skins and braced with thongs.”<sup>13</sup> The pakhāvaj was the predominant drum in Mughal times: it was used to accompany vocal music, such instruments as the *bin* and *rebāb*, and dancing. The relatively rare *bin* performances today are still accompanied by pakhāvaj, as are the more frequent occasions of *dhrupad* singing. Gopal Dass, Madhavrao Alkutar, and Lakshmi Narayan Pawar have been among the few notable pakhāvaj players in recent times.

In Karnatak classical music, the mṛdaṅga is sometimes supplemented by another membranophone, the *kanjira* (similar to the Western tambourine). In the West, this type of instrument is not usually associated with classical music, as it is in India. Experts on the *kanjira* are said to be able to produce, with one hand only, all the variations and patterns that are played on the mṛdaṅga.<sup>14</sup>

The great percussionist Pudukkotai Mamundiya Pillai, who lived in the late nineteenth and early twentieth centuries, is said to have been responsible for the development of the *kanjira* as a concert instrument.<sup>15</sup> Usually, it is one of the instruments found in the *tāla vādya kaccheri*, an ensemble of drums and other percussion instruments that take turns performing rhythmic variations in a given *tāla*. The brilliant technique used on the *kanjira* “must

<sup>11</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 46. It is not clear whether this pertains to both heads. Krishnaswamy says that the left side is about the same on both drums, but the right sides differ “in the distribution of the prepared parts” (*Musical Instruments of India*, p. 73).

<sup>12</sup>Stewart, *The Tablā*, p. 11.

<sup>13</sup>Quoted in Krishnaswamy, *Musical Instruments of India*, p. 75.

<sup>14</sup>Krishnaswamy, *Musical Instruments of India*, p. 77. The *kanjira* is widely used in folk songs and devotional music as well.

<sup>15</sup>L. Shankar, *The Art of Violin Accompaniment in South Indian Classical Music* (Ann Arbor Mich.: University Microfilms, 1974), p. 162.

be influenced by the fact that it is frequently used in conjunction with mṛdaṅga. The *tāla vādya kaccheri* in fact, often becomes a kind of contest in rhythmic dexterity, with each of the several performers on the different instruments trying to outdo the others in imaginative play.”<sup>16</sup> *Kanjira* specialists include C. K. Shyam and S. Sunder.

The *kanjira* is a simple circular wooden frame about ten inches in diameter and two and a half inches deep. Some kind of skin (preferably wild lizard) is stretched across one side. Since the other side is left open, the instrument is a single-headed frame drum. Desired pitches may be obtained by applying a little water to the *kanjira* skin. This reduces the tension of the skin. Variations in sound are produced by pressing the skin near the rim with all four playing fingers (index to little). Three or four slits are made in the frame on the open side of the *kanjira*. One or more pieces of metal or coin are then inserted in a crossbar inside the slits. These produce a jingling sound when the instrument is shaken.<sup>17</sup>

For at least the last one hundred years, yet another percussion instrument has been used in Karnatak classical performance—the *ghaṭam*. Like the *kanjira*, the *ghaṭam* supplements the mṛdaṅga. Unlike the *kanjira*, it is not a membranophone but rather a spherical clay pot without any skin head. Accordingly, it is an idiophone. The specially made pot has a big belly and thus a large playing area. Usually, the playing area is about a foot and a half in diameter, but this depends on the pitch desired, which must be in tune with the drone pitch.<sup>18</sup> The player hits the neck, the center, and the bottom of the pot to produce different sounds. For further variety of sound, he uses both hands, both wrists, all ten fingers, and even his fingernails. “The general effect [is] a fast and scintillating crackling.”<sup>19</sup> The player also can move the narrow open mouth of the pot alternately away from and against his bare stomach. This produces a rising pitch similar to the one sounded by the mṛdaṅga.

Ayyangar relates an anecdote about the bare stomach of the *ghaṭam* player.<sup>20</sup> Salem Subbier, a player of *jaltarang*, made disparaging remarks about the most outstanding *ghaṭam* player of recent memory, Pazhani

<sup>16</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 50.

<sup>17</sup>Krishnaswamy, *Musical Instruments of India*, p. 77. However, Brown states that the instrument has a single jingle in its rim (*The Mṛdaṅga*, Vol. I, p. 50), and, indeed, the picture on p. 77 of Krishnaswamy appears to bear this out.

<sup>18</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 51.

<sup>19</sup>*Ibid.*

<sup>20</sup>This anecdote appears in Ayyangar’s *History of South Indian Music*, p. 315. It is a curious anecdote, since it is a perfectly acceptable Karnatak custom to perform in traditional style—wearing the white *dhoti* (a long, white cloth that the individual wraps around himself—in effect, a man’s sari) tied high, just above the waist. Perhaps this custom was less acceptable in British colonial times than it is at present.

*Jaltarang*, the unfortunate Subbier’s instrument, is a set of eighteen (or so) porcelain cups of different sizes, which are filled with water and tuned to different pitches. The cups are arranged in a semicircle and are played with two slender sticks. The performer must therefore turn continually in order to hit the various cups. Both Hindustāni and Karnatak music are performed on the *jaltarang*.



Krishna Iyer: "O the reputation of a half naked man fisting an earthen pot! Once he comes to my house, I can expose his poor rhythm." Krishna Iyer heard about this remark and determined to get back at Subbier. Soon he had an opportunity: he was to provide ghaṭam accompaniment for Subbier in a wedding concert. Early the day of the wedding, he sent word to Subbier that he would be well advised to leave his coat at home. The message irritated Subbier, and he did not heed it. When it was Krishna Iyer's turn to play solo, during the concert, Subbier kept time with his melody, as was the custom. Iyer kept on playing, challenging Subbier with a rapid flow of more and more intricate rhythms. The jaltarang player sweated profusely in his coat. Finally, when the ghaṭam solo ended, Subbier removed his dripping coat with relief. That was the moment Krishna Iyer had been waiting for. "Wooly headed noodle," he shouted to the boy who had delivered the message to Subbier, "so you did not warn Subbier this morning to leave his coat behind! What a shame for a half naked dandy to face an audience!"

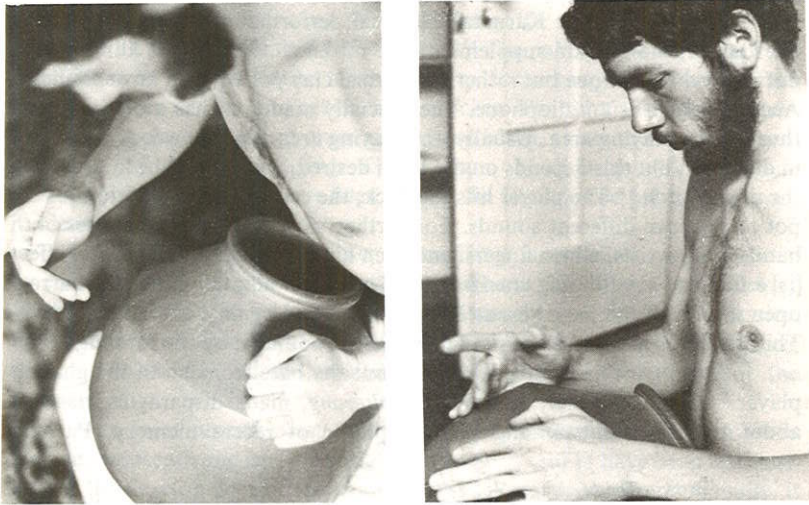


Plate 21  
The Ghaṭam (Being Played by G. Gillette)

The ghaṭam player sometimes throws his instrument into the air, interrupting but not disrupting the continuity of either his rhythm patterns or the tāla. Formerly, the player accentuated the final climax by throwing the instrument high in the air, timing its fall perfectly so that it would break with a crash exactly on the last beat of the last rhythmic pattern. This practice was inexpensive because the clay pot was an ordinary one. Nowadays, however, the clay used for the ghaṭam is mixed with iron filings and then baked.

The pot is no longer allowed to break because of the expense of replacing a good one.<sup>21</sup> Ghaṭam specialists include R. Gurumurthy, Vellore T. G. Ramabhadran, and Sundarmier Palghat.

The other prominent idiophones used in Karnatak classical music are *tālam*, the cymbals used prominently in the accompaniment to *Bhārata Nāṭyam*, a classical dance style. *Tālam* are small, concave, made of bronze, and usually connected by cord. Generally, only the edges are struck. *Tālam* are used by a dance master (*naṭṭuvanar*) to beat the tāla and also sometimes the rhythms of the dance patterns. In *Bhārata Nāṭyam*, *tālam* are part of an accompaniment ensemble that includes the *mṛdaṅga*, a *tāmbūra*, and perhaps a flute and *viṇā*, in addition to the vocalist(s). Many varieties of small paired cymbals are found in India, most of which provide rhythmic accompaniment for devotional music, drama, and religious discourse.

As we noted in Chapter Four, a drum called the *tavil* has traditionally been used to accompany the *nagasvaram*. The *tavil* is generally classed as a barrel-shaped drum, although one might better call it a cylindrical drum with a slight bulge in the middle. This bulge seems to be of no particular importance.<sup>22</sup> The instrument is carved from a single block of wood, and has rather short sides and two large heads. The skins of the heads are stretched over thick hoops made of hemp and six or seven bamboo sticks bundled and bound together with hemp. Interlaced leather thongs fasten the hoops to the shell of the drum. The instrument is tuned to the desired pitch area by a band of leather around the laced thongs at about the middle of the drum. The design of the heads is not as complex as that of the *mṛdaṅga* heads. Neither of the two heads of the *tavil* is tuned to a specific pitch. The right head is played with the wrist and fingers, and the left head is struck with a stick.

The primary percussion instrument in North India since the eighteenth century has been the *tablā*. A *tablā* is in fact two separate drums, one played by each hand, but it is considered one drum with two heads. "Tablā" is the name by which the right drum is usually called. More precisely, it is called "dāhinā" or "dāyāñ," meaning "right." "*Bāyāñ*," which means "left," indicates the left drum. The two drums are totally unlike, but complement each other beautifully.

The history of the *tablā* is not clear, but various theories have been offered. A fanciful one, dubbed a "fairy tale" by Chaitanya Deva, concerns two professional *pakhāvaj* players during Emperor Akbar's time (1556–1605) who were bitter and constant rivals. One of them (Sudhar Khan) happened to lose in a drumming competition. Unable to bear the defeat, he dashed his drum onto the floor. The *pakhāvaj* broke in two, and the parts were made into *tablā* and *bāyāñ*.<sup>23</sup> Another theory is that the *tablā*, like the *sitār* and

<sup>21</sup>Brown, *The Mṛdaṅga*, Vol. I, p. 52.

<sup>22</sup>*Ibid.*, pp. 54–55.

<sup>23</sup>Deva, *Indian Music*, p. 114.





Plate 22  
The Tablā

other instruments, was introduced into Indian classical music by Amir Khusrau in the thirteenth century; this theory assumes that the tablā was imported from farther west.

The term “tablā” is traceable directly to the Arabic “*ṭabl*,” a generic term meaning drum. This term was borrowed from the Aramaic term “*tabla*,” which itself was adapted from the Akkadian word “*tabalu*” or “*tapalu*.”<sup>24</sup> Rebecca Stewart, who has done copious research on the history of the tablā, reports that the many variants of the term “*tablā*” may be found from northern Africa to southern Russia, and from northern China to South America and the Caribbean. The term has not always been attached to the same physical types of drum, however. By the second quarter of the seventeenth century, the names “*atables*” and “*tabales*” had appeared in accounts of travels through the Punjab, the region in Northwest India through which peoples migrated into the subcontinent from the West. The first iconographic depiction of an instrument that closely resembles the present-day Indian tablā was found in 1808.<sup>25</sup>

<sup>24</sup>Stewart, *The Tablā*, p. 6. Stewart cites H. E. Hause, “Terms for Musical Instruments in the Sudanic Languages,” *Supplement to the Journal of the American Oriental Society*, No. 7 (Jan.-Mar. 1948), p. 8, and adds in a footnote (p. 20), “It should be noted that the long accepted etymological derivation of *tabl* from the Latin *tabula* (Curt Sachs, *History of Musical Instruments*, p. 249) is incorrect.”

<sup>25</sup>Stewart, *The Tablā*, p. 6.

For a period of approximately fifty years before this date, however, a veritable flood of Mughal-style miniatures show pairs of instruments which attest to the presence of two types of hand-played drum pairs in contiguous areas of northwestern India: the Punjab (wooden cylindrical pairs) and the Delhi-Rajasthan-Oudh area (metal or clay hemispherical pairs). . . . It appears that sometime during the middle or latter half of the 18th century these two drum types were combined: for the right hand, the fixed-pitch cylindrical Punjabi “*tabla*” was chosen; for the left hand, the variable-pitch hemispherical Delhi “*dūggī*.”<sup>26</sup>

Basing her opinion on both pictorial and literary descriptions, Stewart asserts that this instrument underwent several major and minor alterations between 1750 and 1850, and that the tablā used today is probably no more than seventy to one hundred years old. Like the *sāraṅgī*, the tablā rose to popularity as the types of music it accompanied rose in popularity—vocal *khyāl* and *ṭhumrī* and the developing instrumental solo forms.

The *dāhinā* (right drum) is the higher and more precisely pitched of the pair. Its shape is rather like a pot fashioned on a potter’s wheel, wider at the bottom and tapering upward. Its widest point is about five to six and a half centimeters above its base. It is made of oak or rosewood. The *bāyāñ* is tuned to a general pitch area approximately an octave lower.<sup>27</sup> Nowadays, *bāyāñ* are made of German silver, a silver-white alloy formed of copper, zinc, and nickel. Formerly, *bāyāñ* were made of pottery (and even now the less expensive ones are), but professional performers would not use a pottery instrument in performance. The sizes of *tablā* and *bāyāñ* vary greatly, partly to suit the player’s aesthetic taste, partly to fit the size of his hand, and partly according to the instrument they are likely to be used with, whether for accompanying or other purposes.

The *tablā* and *bāyāñ* heads are both of the composite type, with the top layer of skin cut to a narrow band around the outer edge. Both heads are of goatskin. A circle of black tuning paste applied to the surface of the second layer controls the vibrations of the head. This circle, which is applied in the center of the *tablā*, is close to an edge on the *bāyāñ*, presumably to allow room for the use of the wrist and heel of the left hand. On both drums the paste is permanent; to change it, one must replace the head.

A small goat-hide hoop is placed at the bottom of each drum. A larger, interlaced goat-hide hoop holds the skin in position on the top of each drum, and goat-hide lacing lashed between the two hoops holds the skin taut. Small cylinder-shaped blocks of wood are wedged between the lacing and the body of the drum on the *dāhinā*. It is extremely difficult to insert these blocks,

<sup>26</sup>*Ibid.*, pp. 7, 10.

<sup>27</sup>The tuning of the *bāyāñ* is certainly not standardized. Some teachers assert that the instrument is not tuned at all. Others give various intervals, mostly an octave below the *dāhinā*.



and drummers prefer not to do it themselves because they might injure their hands. Once the blocks are in place, one may adjust the tension of the head by hammering them up or down.

Precise tuning of the *tablā* is done with a small hammer made of German silver. The hammer is held in the left hand, and the right hand does the testing. For general tuning, the wedged blocks are hit; for fine tuning, the hoop around the head is tapped. The tension must be equal all the way around the head, and the same clear sound, at the same precise pitch, must be achieved. If the tuning begins to slip during a performance, the drummer stops to fix it—without interrupting the continuity of the *tāla* (unless the soloist he is accompanying also stops to tune, and usually not even then). The drum is tuned to Sa (or perhaps Pa) of the soloist's voice or of the solo instrument. Tuning the *bāyān* is less complicated than tuning the *dāhinā* because the former is tuned to a general pitch area rather than to a precise pitch. Tapping the hoop around the head with the hammer usually suffices. The thongs on the *bāyān* are sometimes threaded through metal rings two and a half centimeters in diameter, which can be pushed up or down to tighten or loosen the tension on the head.



Plate 23  
Sharda Sahai Playing the *Tablā*

The sounds produced on the *tablā* and *bāyān* are either open or closed (damped or undamped). There is a repertoire of strokes for each hand separately and for the hands together. The index, third, and fourth fingers of the right hand are used, and one stroke calls for the hand to be almost flattened and the fingers to be straight and rocked sideways on the head. On the *bāyān*, the index and middle fingers of the left hand are used, as well as the heel of the hand (for pressure). A range of pitch can be produced on the *bāyān* either by exerting pressure with the heel of the hand or by sliding the hand lightly across the head toward the paste. Exploitation of the range by a drummer is greatly admired.<sup>28</sup> Drummers usually keep a supply of powder nearby to sprinkle on the drumheads. The powder makes it easier to move the fingers and hands quickly. There are many fine *tablā* artists, although few have been soloists. Among those of note are the late Chatur Lal, Alla Rakha, Jnan Prakash Ghosh, Lateef Ahmed Khan, Zakir Hussein Khan, Fais Khan, Anand Gopal Bandyopadhyaya (also called Gopal Banerjee), Shamta Prasad, Krishan Maharaj, and Sharda Sahai.



Plate 24  
Close-up of Player's Hands on the *Tablā*

The *naghāra* is the drum that was used in the *naubat* ensemble in Mughal courts (see p. 110) to accompany the *shehnai*, and it is still frequently used with *shehnai* on the concert stage. It is a single-headed conical drum,

<sup>28</sup>Stewart's *The Tablā* is a fine study of the relationship of *tablā* technique to the technique used in playing other North Indian drums.



or, as Stewart describes it, “the more pointed half of an egg in shape”<sup>29</sup> with a shell of riveted copper, brass, or sheet iron. The size of the naghāra varies extremely, but often a concert instrument will have a diameter of two and a half to three feet.

Two naghāras, one much smaller than that described above, are used to accompany shehnai players. The pair is played by one drummer. The larger drum (*dhama*) is made of metal, and its height and diameter are of equal proportions. The smaller drum (*jhil*) is made of clay or metal. Usually, it is shallower—from twenty-three to twenty-five centimeters high—and the diameter of its head is twenty-eight to thirty centimeters.

Though the relative sophistication of the method for binding the head to the drum is less, this method is basically similar to that used on the *tablā*, *pakhāvaj*, and *dholak* [a drum used in folk music]: the binding laces are not drawn directly through the skin of the head, but in both cases are secured to other cords which form part of a band which encircles the upper rim of the drum. This method of binding ensures a more even distribution of tension and hoops to secure the head to the drum. The lacings form an X-type grid. Though neither drum lends itself readily to precise tuning, the tension of both heads may be altered: that of the *dhama* by an application of water; that of the *jhil* by heat. The *dhama* often has a glutinous tuning paste placed under the center of its head.<sup>30</sup>

The traditional means of playing the naghāra is with sticks. The instruments produce a sharp, resonant sound that can carry quite far. Plate 25 illustrates a pair of naghāra of greatly contrasting sizes.



Plate 25  
A Pair of Naghāra

<sup>29</sup>*Ibid.*, p. 13.

<sup>30</sup>*Ibid.*

## KARNATAK DRUMMING

Drumming is more of a requisite for musical performance in India than in the West. In the West, a solo melody instrument would most likely be complemented by a piano or small instrumental ensemble. In India (North or South), a solo melody instrument is complemented by a drone instrument (as already discussed) and a drum. A vocal solo is accompanied by an ensemble that includes drum, drone, and a stringed melody instrument.

Commencement of formal training in [*mṛdaṅgam*] is usually marked by a *pūjā* ceremony to *Gaṇeṣa*, the god of auspicious beginnings. The teacher may pass the instrument to the student in a special way signifying the acceptance of their relationship and all that it implies. In the case of *mṛdaṅgam*, the drum is held vertically with the outstretched fingers under the braiding of the *valandalai* [right-hand head], and the student accepts it in the same manner. The first lesson is also a special one, likewise dedicated to the elephant deity.

*Piḷḷayār Pādam* (“lesson dedicated to *Piḷḷayār*, or *Gaṇeṣa*”) . . . contains every stroke used later except . . . *NAM*. Although obviously beyond the capabilities of the raw beginner, it is important that the first thing learned should be this ceremonial offering of the sounds of the drum to the deity of beginnings. As in all the lessons, the student imitates as well as he can the teacher’s hand position and tone. . . . One important attitude is at once clarified: the student should attempt to perform things beyond his present ability, to exceed himself in technique.<sup>31</sup>

As we noted earlier, the sounds produced on the *mṛdaṅga* are of two basic types: damped and undamped. Given the complex construction of the drum, which makes it capable of precise pitch, it is more accurate to say that the two types of sound produced approximate either noise or pitch. Fourteen main strokes are used in *mṛdaṅga* playing as performed by T. Ranganathan. Three have individual names, and the rest are referred to by seven syllables (generally called *solkaṭtu*).<sup>32</sup> The fourteen strokes are as follows:

Named strokes (3): *gumiki*, *cāppu*, *araicāppu*

Strokes indicated by syllable (11):

Tom (2)	Di (1)	Ki (1)
Nam (2)	Dim (1)	Ta (1)
Ta (3)		

Presumably, such syllables were originally meant to imitate the sounds of the strokes to which they referred, but with time the use of syllables became more complex.

<sup>31</sup>Brown, *The Mṛdaṅga*, Vol. I, pp. 116–17.

<sup>32</sup>*Ibid.*, p. 92.



Single strokes are combined into stroking patterns, and, thus, single syllables are combined into euphonious, easily recited syllable patterns that indicate such stroking patterns. A distinction must be made here between a syllable that is being used to refer to one of those main strokes and that syllable when it is used in a syllable/stroking pattern. In a pattern context, for instance, the syllable Ta is used for eleven different strokes. On the other hand, one stroke can be referred to by a variety of syllables. One damped right-hand stroke, for example, may be called Di, Ḍa, Ḍu, Ka, Ki, Ku, Mi, Gi, or Ta.<sup>33</sup> The choice of which syllable to use depends on the context—the syllable pattern. “In addition to their purely rhythmic configuration as duration structures in time, the patterns have qualities of pitch, timbre, intensity, a kinesthetic feeling related to their physical production and a vocal form in the shape of spoken syllables.”<sup>34</sup> These patterns are usually not heard in concert, but they are always in a drummer’s head.

The basic idea behind rhythmic development in Karnatak drumming is to take a set of primary materials—a wealth of forms and a wealth of patterns—and constantly rearrange, change, and extend them. In this respect, development in rhythm is like development in melody. For example, a germinal stroking pattern can act as a motive for seemingly inexhaustible possibilities. To begin with, one germinal pattern can be used as the basis for compositions in several tālas. Examples 6-1 and 6-2 illustrate the pattern TANATA JONUTA JOṆU in compositions in two tālas: Example 6-1 is in Ādi tāla, whose structure is 4 + 2 + 2, and Example 6-2 is in Khaṇḍa Cāpu tāla, whose structure is 2 + 3. To fit into the latter, JOṆU is repeated, so that pattern becomes TANATA JONUTA JOṆU JOṆU.<sup>35</sup>

In these examples as I have notated them, no indication of the stroking technique is given; therefore, left-hand and right-hand movements are not specified. Each count of the tāla is shown by an arabic numeral. Subdivisions within the tāla cycle are marked with a single slash, and the end of a cycle is marked with a double slash—for example, Ādi tāla: 1 2 3 4/5 6/7 8//; Khaṇḍa Cāpu tāla: 1 2/3 4 5//. All strokes shown within a count are of equal duration unless otherwise indicated. A segment of time of that duration that is not filled by a stroke is indicated by a dot: the duration of . . . equals the duration of TANATA. (A dot beneath a letter is part of the transliteration of the letter; it has no rhythmic significance.)

<sup>33</sup>*Ibid.*, p. 96. For a good discussion of the structure of this drum language, see Chapter Five of this source.

<sup>34</sup>*Ibid.*, p. 60.

<sup>35</sup>Examples 6-1 and 6-2 are from Brown, *The Mṛdaṅga*, Vol. II, pp. 139–40 and 227–30, respectively. Brown indicates stroking techniques as well. In Example 6-1, the repetition of TANATA JONUTA JOṆU (count 2) is played without the left hand. Therefore, although the syllables repeat, the sound of the pattern when drummed is slightly different.

EXAMPLE 6-1 Stroking Pattern in Ādi Tāla

1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	JO	NU	TA	JO	NU
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAN	TA	TA	TA	TA/
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	JO	NU	TA	JO	NU/
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAN	TA	TA	TA	TA//
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
5	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
7	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
1	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA	TA	TA
3	TA	TA	TA	JO	NU	TA	TA	TA	NA	TA	TAM	TA	TA		



## EXAMPLE 6-2 Stroking Pattern in Khaṇḍa Cāpu Tāla

	1	2	3	4	5	//1	2	/3	4	5	/	
	TA	NA	TA	JO	NU	TA	JO	NU	TA	JO	NU	TA
	TA	NA	TA	JO	NU	TA	JO	NU	TA	JO	NU	TA
	Repeat the preceding four cycles.											
	TA	NA	TA	JO	NU	TA	JO	NU	TA	JO	NU	TA
	TA	NA	TA	TAM	•	TAM	•	TAM	•	TA	//	
	Repeat the preceding three cycles.											
	TA	NA	TA	JO	NU	TA	JO	NU	TA	JO	NU	TA
	TA	NA	TA	JO	NU	TA	JO	NU	TA	JO	NU	TA
	TA	NA	TA	TAM	•	TAM	•	TAM	•	TA	//	
	TA	NA	TA	TAM	•	TAM	•	TAM	•	TA	//	
	TA	NA	TA	TAM	•	TA	NA	TA	TAM	•	TA	TA
	TA	NA	TA	TAM	•	TA	NA	TA	TAM	•	TA	TA
	(Mōrā begins here:)											
	TA	NA	//TA	TAM	•	TA	TA	TAM	•	TA	TAM	•
	//TA	NA	TA	TAM	•	TAM	•	TA	TAM	•	TA	TAM
	//	•	TA	NA	TA	TAM	•	TAM	•	TA	TA	//
	//	•	TA	NA	TA	TAM	•	TAM	•	TA	TA	//
	//	•	TA	NA	TA	TAM	•	TAM	•	TA	TA	//

In Example 6-1, each tāla count is subdivided into eight strokes, or eight equal durations. In Example 6-2, each tāla count is subdivided into two strokes or two equal durations. In each example, the strokes TA, TAM, and TAN are drummed the same way. The spoken nasals “m” and “n” in TAM and TAN indicate a prolongation that is matched on the drum by the absence of a new stroke in the succeeding unit of time.

Examples 6-1 and 6-2 both end in a *mōrā*. A *mōrā* is a cadential phrase that is played three times and ends on an important count of the tāla—either sama (count 1) or eḍuppu, the count on which a composition begins. Cross-rhythms are created purposely in a *mōrā* because each repetition begins at a different moment in the tāla cycle. The *mōrā* pattern in Example 6-1 is TA NA TA TAN • TAN • TA TON • DA • TAM. The beginning of each of the three occurrences of this pattern in the example is marked by a box around the initial stroke TA. There is an equal amount of time between appearance one and appearance two of the pattern, and between appearance two and appearance three. This *mōrā* ends on sama.

The *mōrā* pattern in Example 6-2 is shorter: TA NA TA TAM • TAM • TA TAM; it, too ends on sama. *Mōrās* can be less symmetrical and quite a bit more complex than this. The phrases can even be of different lengths, as long as the essence of *mōrā* is kept—the pull of cross-rhythm and its resolution at the appointed place.<sup>36</sup>

Students beginning to study *mṛdaṅga* learn to produce the basic strokes, then basic patterns. From the earliest lessons, they learn the principle and technique of playing in levels of speed (the only means of acceleration allowed in Karnatak music). The principle is demonstrated here with a basic stroke pattern, TA DI TOM NAM. In Example 6-3, the pattern is in four levels of speed. In Example 6-4, each stroke of the pattern is played three times so that the student becomes accustomed to triplets. When the pattern is played in duple levels of speed, cross-rhythms are created. The purpose of the exercise is to teach the student to control exact units of time. The student should also attempt to execute each stroke at the same dynamic level.<sup>37</sup>

So that students may learn the principle of gradual growth from a germinal idea, lessons are given in which patterns are inserted between the TA, DI, TOM, and NAM strokes. These insertions are fundamental combinations of strokes that increase gradually from a length of two syllables to one of twenty-two syllables. These are not taught as in a tāla. Example 6-5 shows such insertions.<sup>38</sup> The main strokes are in italics. The insertions made between those syllables are: (1) • KITA (which is two drumming strokes in

<sup>36</sup>*Ibid.*, Vol. I, p. 165.

<sup>37</sup>These exercises are described fully in Brown, *The Mṛdaṅga*, Vol. I, Chapter Seven.

<sup>38</sup>Example 6-5 is adapted from Brown, *The Mṛdaṅga*, Vol. II, pp. 4-7, 12.



EXAMPLE 6-3 Stroking Pattern in Four Levels of Speed

TA	DI	NAM	/
TA	TOM	TOM	/
TA	/TA	TOM	/
TA	DI TOM NAM/TA	DI TOM NAM/TA	DI TOM NAM/
TOM	NAM	NAM	/
TA	TOM	TOM	/
TA	/TA	TOM	/
TA	DI TOM NAM/TA	DI TOM NAM/TA	DI TOM NAM/

EXAMPLE 6-4 Stroking Pattern of Triplets in Levels of Speed

TA	DI	NAM	/
TA	TA	DI	DI
TA	DI	DI TOM	DI TOM NAM NAM NAM/
NOM	NOM	TAM	TAM
TA	DI	DI TOM	DI TOM NAM NAM NAM/

one count, as in (↓ x x ·  $\overbrace{\text{ki ta}}$ ); (2) KITA TAKA (x x x x); (3) • KITA TAKA (↓ x x x x); (4) repeat of preceding main stroke plus KITA; (5) repeat of preceding main stroke plus KITA TAKA; and (6) • KITA TAKA TAKA.

EXAMPLE 6-5 Principle of Gradual Growth from a Germinal Idea

TA	•	KITA	DI	•	KITA	TOM	•	KITA	NAM	•
KITA	TA	KITA	TAKA	DI	KITA	TAKA	TOM	KITA	TAKA	NAM
KITA	TAKA	TA	•	KITA	TAKA	DI	•	KITA	TAKA	TOM
•	KITA	TAKA	NAM	•	KITA	TAKA	TA	TA	KITA	DI
DI	KITA	TOM	TOM	KITA	NAM	NAM	KITA	TA	TA	KITA
TAKA	DI	DI	KITA	TAKA	TOM	TOM	KITA	TAKA	NAM	
NAM	KITA	TAKA	TA	•	KITA	TAKA	TAKA	DI	•	KITA
TAKA	TAKA	TOM	•	KITA	TAKA	TAKA	NAM	•	KITA	TAKA
TAKA	TA	[etc.]								

A number of other fundamental combinations of strokes are inserted as this learning exercise proceeds. With the insertion pattern TARIGIDU—for instance, in the line TA • KITA KIṬATAKA DIKUTAKA TARIGIDU—the point made earlier about euphonic syllable choice comes into play. The pattern TARIGIDU is played just like KIṬATAKA. It would be awkward to say TA • KITA KIṬATAKA DIKUTAKA KITATAKA.

There seems to be only one logical explanation for this phenomenon. . . . That is, that the practice of forming solkattus has now advanced far beyond the point where it represents a simple suggestion of the drum sound, much less an exact vocal parallel. The drum syllables lead a life of their own, so to speak. . . . The stringing together of longer patterns depends on aesthetic and euphonic conditions. . . . the practice of representing rhythmic pattern by spoken syllables is more than a science, it is an art, and it is entirely concerned with the beauty of sound.<sup>39</sup>

At a later stage of training, the student of mṛdaṅga begins to put the ideas of germinal motive and gradual elaboration into the framework of a tāla. He also learns how to create other shapes. For example, he may start with a long pattern and gradually reduce it. This is called *gopuccha*, the shape of a cow's tail—thick at the beginning and tapering to thin. These shapes can be used in the mōrā. This is demonstrated in Example 6-6, a composition in Ādi tāla in which each count is divided into four equal

<sup>39</sup>*Ibid.*, Vol. I, pp. 135–36.







