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Source: *Yearbook of the International Folk Music Council*, Vol. 3 (1971), pp. 79-90

Published by: [International Council for Traditional Music](#)

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## “LUDAYA” – A TRANSVERSE FLUTE FROM EASTERN UGANDA

by Peter R. Cooke

Most of the many different ethnic groups living within Uganda have some use for flutes of one kind or another. With very few exceptions, however, the flutes are all endblown instruments either with a straight-cut sharp rim (blown across the rim obliquely) or of the notched variety. Wachsmann (1953)<sup>1</sup> gives informative descriptions of most of these together with the few exceptions; the globular (ocarina type) instruments and a long transverse flute (Vern. *Ludaya* or *Lusweje*)<sup>2</sup> played among the upland Gisu in Eastern Uganda. Elsewhere in East Africa transverse flutes – presumably of Arab origin – are played among coastal tribes in Kenya and possibly among the Pogoro of East Central Tanzania. Culwick's<sup>3</sup> illustration of a three-stop flute played by the latter people shows two of the stops at one end and the third at the other – thus suggesting that it is a side blown flute. What he means, however, when he writes that “it is played in the normal manner” is not clear, since apart from the instances cited, indigenous transverse flutes can be found nowhere else in East Africa.

### *The Gisu*

The Gisu probably number some quarter of a million persons, most of whom live on the western slopes of Mount Elgon and on the plains around that part of its base. Those on the plains live among a mixture of ethnic groups, namely: Teso, Adhola, Nyole, Gwere and Samia. The Gisu have been considered to be among the oldest Bantu peoples of that area, stretching from the north-east shores of Lake Victoria to the mountain itself and have often in the past taken shelter in caves and dense forests on its upper slopes to escape marauders (notably the Masai).

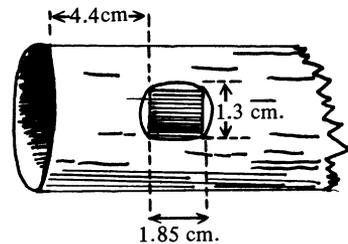
The Gisu are agriculturalists, but a number of those who live on the higher slopes of the 14,000 ft. mountain prefer to earn a livelihood by hunting and gathering food in the forests above the normal habitation level. There they catch small game, collect bamboo shoots – a local delicacy – and carry them down to sell at markets in the foothills. It is among these people that the *Ludaya* is most popular.<sup>4</sup> Gisu living nearer the foot of the mountain do not play *Ludaya* – possibly because no really suitable raw material for its manufacture grows on the lower slopes. The Gisu call the mountain *Masaba* and themselves *BaMasaba* (people of *Masaba*). They speak *Lumasaba* and many claim that their people have always lived in the mountain which is also the source of many of their pagan religious beliefs. As might be expected, many of their songs contain references to the mountain as do two of the three songs discussed later.

*The Instrument*

Ludaya is usually made from the dried flower spike of the giant *Lobelia* (vern. *Litaya*) found in the upper parts of the forests on East Africa's mountains. The material is ideal in many ways for flute making and is used for flutes by the Kiga, Nyarwanda and Nyankore who live in Western Uganda as well as by Tepeth tribesmen who live in the smaller mountains rising out of the plains of Karamoja to the north of Mount Elgon. When the tall flower spike is cut off the plant (which can grow to heights of 20 feet or more), the dried flowerets are scraped off to leave a straight, hollow, thin-walled tube up to 1-1/2 metres long with a clean, gently conical bore. The walls can easily and quickly be pierced by burning or cutting. Kibulo, son of Nachawo, of the Bugosagira clan (whose flute and performances provided the data for this paper) described the customary way of determining the length of Ludaya. The tube is held in a horizontal playing position (see Plate 1) and cut off just short of the furthest point along the tube that the player can comfortably reach with his right hand index finger. Once the flute is neatly cut to length at right-angles to its length and a neat mouth-hole cut some 4-5 cm. from the wide end, the flute is ready for playing. (I could not discover whether or not the flute is 'given a drink' of water or other liquid before it is first played — a common ritual in other parts of Uganda.) Kibulo's flute when first made was approximately 12 cm. longer than when the recordings were made. One disadvantage of *Lobelia* stalk is that it is fragile and easily attacked by boring insects. Kibulo's flute had, furthermore, a 10 cm. split in its wall midway along it which he had sealed with a wrapping of thin polythene strips.

*Kibulo's Flute*

|                    |          |
|--------------------|----------|
| Length             | 88.4 cm. |
| Diameter of bore:  |          |
| at wide end        | 1.9 cm.  |
| at narrow end      | 1.2 cm.  |
| Thickness of wood: |          |
| at wide end        | 0.18 cm. |
| at narrow end      | 0.1 cm.  |



Detail of mouth-hole

(A similar specimen in the Uganda museum measured 67.3 cm. long.)

*Playing Technique*

The index finger of the left hand curls around the flute between the wide end and the mouth-hole while the thumb is used to block that end. The flute is held horizontally and the right hand stretches out to hold the other end, so that the index finger can open or close the end hole at will. There are no finger stops in the instrument wall and the player produces his melodies by overblowing and selecting from two series of harmonics which can be

sounded. They are those of the open-ended flute and those of the stopped flute. The fundamental, or first harmonic, of either series is unobtainable due to the narrow bore of the instrument, but the upper harmonics can be clearly sounded and a scale can be produced by alternately stopping and unstopping the flute. The player's embouchure is like that for a Western transverse flute. To further my study of the instrument I purchased Kibulo's flute, learnt the tunes I had recorded and measured the pitch of each note produced.<sup>5</sup> They were:—

*Series 1: Flute with narrow end unstopped*

|   |             |       |       |        |        |           |
|---|-------------|-------|-------|--------|--------|-----------|
| Convenient notation                       |             |       |       |        |        |           |
| Cents sharp + or flat - of tempered scale | (not blown) | - 1   | + 6   | - 9    | - 42   | - 59 + 41 |
| Actual V.P.S.                             |             | 415   | 624   | 826    | 1022   | 1204      |
| Theoretical V.P.S. (208)                  | (416)       | (624) | (832) | (1040) | (1248) |           |
| Harmonic                                  | 1st         | 2nd   | 3rd   | 4th    | 5th    | 6th       |

*Series 2: Flute with narrow end stopped*

(Stopped pipes produce a first harmonic [fundamental] which is an octave lower than that of an unstopped pipe of same length and only the odd number harmonics can be blown.)

|   |             |       |       |       |        |        |      |
|---|-------------|-------|-------|-------|--------|--------|------|
| Convenient notation                       |             |       |       |       |        |        |      |
| Cents sharp + or flat - of tempered scale | (not blown) | + 57  | + 15  | - 25  | + 3    | + 23   | - 4  |
| Actual V.P.S.                             | —           | 322   | 528   | 730   | 934    | 1124   | 1316 |
| Theoretical V.P.S. (104)                  | (312)       | (520) | (728) | (936) | (1144) | (1352) |      |
| Harmonic                                  | 1st         | 3rd   | 5th   | 7th   | 9th    | 11th   | 13th |

The player selects from both series of harmonics (which can then make the following scale):—

|                     |          |      |     |      |     |     |      |      |      |     |
|---------------------|----------|------|-----|------|-----|-----|------|------|------|-----|
| Convenient notation |          |      |     |      |     |     |      |      |      |     |
| Intervals in cents  |          | + 15 | + 6 | - 25 | - 9 | + 3 | - 42 | + 23 | + 41 | - 4 |
|                     |          | 291  | 269 | 216  | 212 | 155 | 165  | 118  | 155  |     |
|                     | not used |      |     |      |     |     |      |      |      |     |

Experiments with different lengths of Lobelia stalk confirmed that shorter flutes would produce similar harmonic series with a similar relationship to

each other, though the highest harmonics were often impossible to blow unless the flute had a considerably narrower bore. This would suggest that the Gisu can produce notes from flutes of various lengths all of which have quite acceptable tuning for their songs. An obvious feature of Gisu vocal melodies is that they contain more than five notes to the octave and some semitone intervals. This distinguishes them from vocal music of the Bantu kingdoms and that of Hamitic and Nilotic tribes in Uganda. The scale above shows one interval usable as a "semitone" and another three "neutral" tones, i.e., intervals which could function as tones, semitones or three-quarter tones.

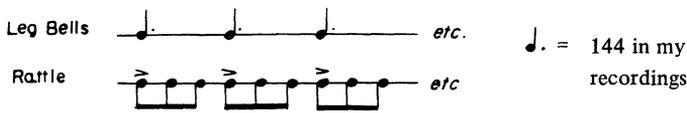
### *Function and Repertoire*

The Ludaya is nowadays played mostly for entertainment and has no significant part in any ritual. Women do not usually play it. In the musico-dance excursions made by young initiates and their brethren in the months before circumcision (in North Bugisu) a flute is often blown with the many drums and bells used and plays phrases which represent sung words exhorting those soon to be circumcised to have courage. Possibly Ludaya was commonly used for this purpose but nowadays a "tin" whistle of European or Asian (Bombay) manufacture is a convenient and acceptable substitute. Such an instrument was found in use in this manner on the same day that my recordings were made only two kilometres from Kibulo's own village. Another Gisu flute, Khumulele (a notched flute with two stops), is used in pairs for wedding music in south and central Bugisu. Fontaine<sup>7</sup> mentions also a notched flute with four stops used by the Gisu of the lowlands but it is likely that this is a recent introduction as it is popular amongst the smaller neighbouring tribal groups. Wachsmann<sup>8</sup> describes a Ludaya found in the hands of a Gisu herdsboy near Bumasisfwa which suggests that it, like flutes



*Kibulo playing his Ludaya (flute) with his assistant Oduro holding the Isaasi (rattle).*

used by other tribes, is also used for self entertainment by boys watching cattle. They are often used at beer parties and to entertain chiefs and other important persons. Two other instruments having similar functions and sharing the same repertoire are the tube fiddle (with one or two strings) found in South Bugisu (Vern. *Siilili*) and the seven-stringed lyre called Liduku (South Bugisu – *Litungu*). All three instruments are usually accompanied with a regular jingling pulse made by a number of crescent-shaped bells (Vern. Bitsete; South Bugisu – Bizeze) strapped to the calf of the performer while another player shakes a flat tin rattle (Vern. *Isaasi*) to produce a triplet figure against the bell pulse.<sup>9</sup>



### *The Recordings*<sup>10</sup>

I made two unsuccessful visits to the mountain before collecting an instrument and making recordings, which together form the data for this paper. The two earlier visits were to meet a woman famed throughout South Bugisu for her skill on the Ludaya. Each time she (the only female flautist I knew of in Uganda) was up in the bamboo forest on one of her frequent hunting expeditions and had not been seen for many days by her people.<sup>11</sup> It was only when I visited Bumasifwa in North Bugisu that I eventually contacted my informant, Kibulo.

On this occasion (30.6.68) Kibulo appeared in the company of a Liduku player, Jome, and his young assistant, Oduro, who played the rattle.<sup>12</sup> They had been contacted at my request by the County (Gombolola) Chief and performed the items outside the County Clerk's office – not, of course, a usual playing situation. The first two songs (“Bateberese” and “Maleha Gama Imasaaba”) were played by all three and since the Liduku player had not tuned his instrument to agree with the Ludaya, the effect was somewhat bitonal.<sup>13</sup> After questioning, Kibulo admitted that it was not customary for the two melody instruments to combine but that the local Chief had asked them to do so (presumably to impress the European!). They themselves did not like the musical result – nor seemed to dislike it enough to refuse the Chief's bidding.<sup>14</sup> They then performed in turn, Jome and his young friend providing the accompaniment on leg bells and rattle for Kibulo's song “Mwana womugisu ama imasaaba.”

Three songs are too small a sample to allow one to generalise on the music of Ludaya, but, since other Gisu who have heard playbacks of the performances described the flute's contributions as typical, I include

transcriptions and a brief analysis of Kibulo's performance. For ease of reading, the songs are transposed as follows:—



– or + = notes approximately  
1/4 tone flat or sharp

“Mwana womugisu ama imasaaba”  
“Child of a Mugisu from Masaaba”

Bell pulse    ♩    ♩    ♩    ♩    ♩    ♩    ♩    ♩    :||

Rattle    ♪♪♪    ♪♪♪    ♪♪♪    ♪♪♪    ♪♪♪    ♪♪♪    ♪♪♪    ♪♪♪    :||

The main melody is written on a single staff in treble clef with a key signature of one sharp (F#). It consists of six lines of music. The first line starts with a double bar line and a repeat sign. The second line continues the melody. The third line continues. The fourth line continues. The fifth line continues. The sixth line ends with a double bar line and a repeat sign, followed by the text "etc.".

Line 3 might be said to be the basic melody (divisible into two phrases) since it was repeated exactly for lines 4, 8, 10, 18, 22, 23, 24, 30, 33 and 37. Other variants of this line are made by a few rhythmic alterations but principally by sounding (intentionally or otherwise) a neighbouring harmonic

of the same series. Shown below on one staff are all the notes used in variants of this basic melody. The lines indicate different directions taken after a note. During the course of the song Kibulo played most of the permutations possible, seemingly in no special order.



- x = these played once only (line 35).
- p = this played once only (line 27).
- = stopped harmonic.
- o = unstopped harmonic.

Note the occasional use of a low tongued appoggiatura (e.g., line 5) which was found at the opening of either phrase. The first note of the second phrase was sometimes omitted to give more time for a breath. Several versions of the words “Mwana wo mugisu” were included in a short repeat of the song. Kibulo played while Jome sang.

It will be noted from the following transcription that the flute version differs little in outline from the sung version. The flautist, who played non legato throughout with a strong tonguing action did not, however, try to represent any of the pitch slides noticeable on some of the sung syllables (indicated with ).

Bell pulse

mwa-na wo mu-gi-su ma - yi; i - se na - ma\_j - ma - sa - (ba).  
 Child of(a) mu-gi-su, moth-er; I come from Ma- sa - ba.

mwa-na wo mu-gi-su ma - yi; i - se na - ma\_j - ma - sa - (ba).

(mumbled) gi- su ma - yi; i - se na - ma\_j - ma - sa - (ba).

The pitches of the singer’s tones have not been accurately measured and what is shown is a subjective European response to the problem of notating his part. It may only be a sign of unavoidable ethnocentricity that the

performances of both singer and flautist suggest that a Gisu equivalent of a European major mode is being employed (with the same subjective tonic A). Jome's somewhat free intonation and occasional "parlando" style, with the fact that the flute sounds three octaves above the voice, make closer comparison of intonations unprofitable.

Interspersed among the variants of this melody were six lines of a melody (with a different first half) shown below in four of its versions. I did not note any close similarity between this melody and any phrase sung by Jome — though it is possible that there are other words in the song which Kibulo knew possessing this tonal and rhythmic outline.

In general the character of the melody suits the instrument's possibilities perfectly. Clean tonguing action makes for a neat change of vibration pattern in the flute and permits rapid leaps within one harmonic series. Slurred scale passages are difficult and slides impossible to execute (except to an adjacent note by gradually opening or stopping the end) so both are avoided. Variety of phrase is achieved by subtle rhythmic variation which is neatly controlled by the tongue. Although there are words for this song, one must consider the possibility that this melody arose through improvising on the instrument rather than by an attempt to represent song and that words have been added subsequently.

*Tone Analysis*

Intervals given in Cents. ↓ = Subjective tonic

“Batebereze”

Transcriptions of this and the following song are given purely to show the flute’s outline melody and different variations. It might only lead to confusion if Jome’s sung part and his Liduku version were also included.

The image shows six staves of musical notation in a single system. Each staff begins with a treble clef and a key signature of one flat (B-flat). The notation consists of a sequence of notes and rests, with vertical bar lines indicating the end of measures. The first staff starts with a double bar line and a repeat sign. The subsequent staves show variations in the melodic line, with some notes beamed together and others separated by rests.

Only the first six lines are quoted but the subtleties of the rhythmic variations are apparent. The very disjunct melody is somewhat fragmented by frequent rests. The subjective tonal basis is not clear but a note count produces the following basic contours which clearly shows two distinct alternating phrases, each of 8 pulses (6 + 2 pulses rest).

The image shows two staves of musical notation. The top staff is labeled "lines 1, 3, 5 etc." and shows a sequence of notes with a double bar line and repeat sign at the end. Below this staff is a "Bell pulse" diagram consisting of a series of vertical lines of varying heights, representing the rhythmic pattern. The bottom staff is labeled "lines 2, 4, 6 etc." and shows a similar sequence of notes with a double bar line and repeat sign at the end.

One reason for the many variations in choice of harmonic and rhythms may be that Kibulo knew many different words for the song (or was reminded of them while Jome sang) and his melodies reflected the different tonal and rhythmic patterns of those words.

*Tone Analysis*

A musical staff in G major with a treble clef and a key signature of one sharp (F#). The notes are G4, A4, B4, C5, B4, A4, G4. Below the staff, intervals in cents are indicated: 118 (G-A), 283 (A-B), 165 (B-C), 320 (C-B), 155 (B-A), 367 (A-G), 212 (G-A), 216 (A-B), and 485 (B-C). A dashed line connects the 118, 165, 155, 212, 216, and 485 intervals, forming a shape that suggests a subjective tonic. The text 'Intervals given in Cents.' is on the left, and 'Subjective tonic?' is on the right.

The “key” signature of this and the following song may well mislead the reader. While G-D<sup>b</sup> suggests a ‘diminished 5th’, it should be noted that the interval is actually 650 Cents, i.e., a quarter-tone short of a perfect 5th. European ears tend, in fact, to rationalize this interval as a perfect 5th when it is heard in these two performances.

*“Maleha gama imasaaba” (‘Bamboos from Masaba’)*

Duple division of the ♩ pulse is so frequently encountered in this song that I have preferred to write it in duple time throughout (♩ = ♩). Again it is an eight pulse melody consisting of two equal phrases, as evidenced by the player’s breathing points. Only the first six lines are shown below.

Bell pulse ♩ ♩ ♩ ♩ ♩ ♩ ♩ ♩

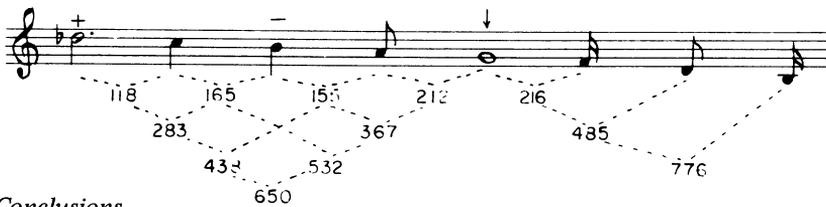
Four staves of musical notation in G major (one sharp). The first staff shows a rhythmic pattern of eighth notes. The subsequent three staves show a melodic line with various rhythmic values, including eighth and sixteenth notes, and triplets. Vertical lines above the notes indicate breathing points. The notation ends with a double bar line.



The general contours of the melody are as follows:



#### Tone Analysis



#### Conclusions

Ludaya is an unusual type of flute found among that section of the Gisu people who live on the higher inhabited slopes of Mount Elgon in East Uganda. It is unusual firstly because transverse flutes are rare in East Africa; the possibility that it is more than an original invention of those people and that it may indicate past cultural links with other tribes playing transverse flutes can be considered very remote. So, too, can be the chance that it is merely an imitation of a European flute (the  $D^b$  piccolo) played in many Catholic mission schools in Uganda. The second unusual feature is the absence of stops in the side wall and its playing technique.<sup>15</sup> Two other tall Lobelia flutes in Uganda, the straight-rim obliquely blown Sereu of the Tepeth and the endblown notched Ekinimba of the Kiga, have only two stops and so logically players make use of the higher harmonics produced on their instruments (open-ended), but here the similarities end.

Ludaya does not appear to have any magic or ritualistic significance and is used principally for entertainment, especially at beer parties.

Further study of samples of Ludaya music will throw added light on the tonal and modal organisation of Gisu music, as well as give some clue to Gisu tolerance of intonation discrepancies between voice and instruments. It will also be necessary to examine further how far the songs are a product of the instrument's distinctive playing technique and are instrumentally derived or whether the instrument merely shares with other popular instruments a repertoire of verbally derived songs.

## FOOTNOTES

1. Trowell and Wachsmann. 1953, *Tribal Crafts of Uganda*, pt. 2.
  2. South Bugisu vernacular: *Lutaya*.
  3. Culwick, G. M., *Man*, vol. 35, no. 39 (1935), pp. 40-42.
  4. Mr. Wamanga (Gisu headmaster of an Mbale Primary school), on reading this, commented, "These men are the original Gisu".
  5. Tuning measurements were made on the stroboconn of the School of Oriental and African Studies, London. I personally sounded the notes on the instrument, making no attempt to humour the pitch of any tone. This I did after playing for some minutes in tune with the playback of Kibulo's own performance. Kibulo himself did not appear to make any attempts at humouring the tones. Later attempts I made showed that one could in this manner vary the middle range of tones by as much as 40 Cents.
  6. The instrumental and vocal music of these tribes is basically pentatonic and, with the exception of those tribes using a melismatic singing style, most intervals are not less than one tempered tone. cf. Wachsmann, "An equal stepped tuning in a Ganda harp." *Nature*, vol. 165, no. 4184 (1950), pp. 40-41.
  7. La Fontaine, J. S., *The Gisu – Ethnographic Survey of East Central Africa* (1959), Pt. X.
  8. Trowell and Wachsmann, op. cit., p. 347.
  9. I have observed Konjo musicians accompanying their tall notched flutes with a similar rhythm. In this case the bells, strapped in the same way, just below the dancers' left knees, have provided the same jingling pulse (♩ = 184) while the triplets have been beaten on the drum skin or on the rim of a small Uganda drum. Again, this music is played at beer parties.
  10. An Uher 4000 R machine was used for making half track recordings at 3-3/4 i.p.s. A copy of the tape is lodged in the archives of the School of Scottish Studies, University of Edinburgh, where it is available for study.
  11. La Fontaine, op. cit., mentions the occurrence of transvestites among the Gisu and comments from informants suggested that this woman was one and her playing of the flute was yet another symbol of her 'manliness'.
  12. Jome, Son of Wadulo and Oduro, Son of Wanziguya, both of the Bunaseche clan.
  13. Tuning of Jome's Liduku.
- 
14. Mr. Wamanga (cf. footnote 5) opined that the Liduku was a recent introduction to North Bugisu and that local musicians were just beginning to experiment in combining Liduku with the more established instruments used at beer parties.
  15. Groven, E. (1927), *Naturskalen* in "Tillegsbok til Norske folkekultur", Skien, p. 48 describes a willow flute used in parts of Norway, the Seljefloyte, which is similar in playing technique and appearance to the Ludaya. See also Ola Kai Ledang's paper, "The Seljeflute and its qualities as a musical instrument" (1969).