

THE AMERICANIZATION OF THREE AFRICAN MUSICAL INSTRUMENTS

by

DENNIS MURPHY

This article describes three instruments often made and used in the United States by myself, my friends and students. These have ultimately been inspired by African instruments. Although in each instance I have developed the local variant and introduced it to others, many people have built these, and presumably have taught others to make and use them. Thus all three are now a minor part of amateur music-making in several localities in the United States.

The mouthbow

Not only is the mouthbow a geographically widespread instrument, but it must be immensely old. One of the best-known European prehistoric cave-paintings depicts a person playing a mouthbow.

Although I had often come across references to the use of mouthbows in Africa, and had seen a few pictures of people playing them, I was not at first interested in making one to see what it would do. It seemed impossible that it could do more than drone away on one note.

One day I heard a recording by an American folksinger who used a mouthbow to play interludes between verses of songs, while accompanied by a guitarist. I was struck by the novelty of the sound, and began experimenting.

The first efforts were with wound metal strings, usually banjo C-strings, and a length of tree branch about three feet long. This proved a very convenient length, and I could tune it to E, which allowed me to play over a guitar accompaniment. Tuning was accomplished by a piano tuning-pin driven into a hole in the lower (thicker) end of the stick. The thin end was whittled down somewhat, at first only to remove the bark in that area. Later we began to flatten this area, as it seemed to make the bow more efficient. See Fig. 1a, which shows an easy method of attaching the wire at the upper end without leaving a dangerously protruding wire-end.

The playing technique is to open the mouth slightly, placing the bow firmly against the right cheek in the area left between upper and lower teeth (with the string outward, of course). Thus the upper inch or so of the stick transmits the vibrations of the string to the cheek. The bow goes diagonally across the face, and the player makes whistling motions, without actually whistling, and thereby isolates and reinforces the various overtones produced by the string. The string is "twanged" vigorously about three inches from the end, using a pick held in the right hand.

Each player will have his own favourite kind of pick which he will insist is the best. I use a thin slip of wood, $2\frac{3}{4}$ inches long, somewhat rounded at the end (Fig. 1b). The arrows indicate the direction of motion. This is probably the most popular kind of pick, and is often made from the handle of a discarded toothbrush.

Word rapidly spread throughout our immediate circle of friends, most of whom were musicians, potters and painters, and a mouthbow craze began.

We soon began trying variations. The most important variation was the use of a longer stick, perhaps five or six feet long, with a plain steel string. We found this gave a clearer sound, richer in upper partials, and better sustaining than the wound string.

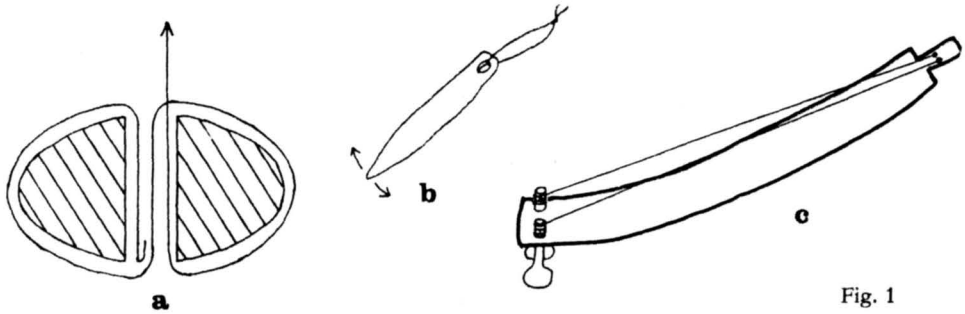


Fig. 1

The only disadvantage is that it requires a rather strong wrist and grip to keep it in playing position. We eventually settled on 6-gauge (.016" diam.) "music wire" as the best all-around size, taking into consideration clarity, volume of sound and pitch level. This wire is available in the United States from several companies, and comes in two degrees of quality: that intended for musical instruments, and that intended for making springs and similar small machine parts. The latter is what we use, since it is vastly cheaper, and any flat spots are easily seen and discarded. Thus it cost us very little to make mouthbows, and we felt free to experiment all we liked.

Later, one of my friends came up with a two-string bow, using a piece of lath about two inches wide, three feet long, and $\frac{1}{4}$ inch thick. He uses two metal guitar strings of the same size . . . any size, depending on desired pitch. These come with a smooth metal ring around which the end is smoothly wrapped. Thus there is no worry about sharp string ends if this end of each string is put at the upper end of the lath. The strings are pushed through two holes at the upper end, which is a cut-down area (see Fig. 1c). This gives portability and comparatively high volume, and that tonal quality peculiar to two not-quite-identically-tuned strings. The pitch of this kind of bow is not usually as low as that of the six footers, but this is a minor defect compared to its many virtues.

This might be the time to point out that the lower the fundamental pitch of the string (within reason), the more harmonics will lie in that area reinforceable by the oral cavity. Since oral cavities are pretty much of a size, most people obtain the greatest range of tones when the bow is tuned somewhere in the neighbourhood of C below the bass staff to the G just above.

Later we began to use autoharp tuning pins, which are a small version of piano pins, and require a much smaller and less expensive tuning wrench. Autoharp pins have become by far the most common tuning device. However we sometimes use wooden pegs, either old violin or viola pegs or handmade equivalents, which are visually attractive though less practical as they can slip if not perfectly adjusted. One can also use a large screw eye, but this is strictly an emergency measure.

I once made a three-string mouthbow, using an interestingly twisted tree branch and three very large and ornate wooden pegs. It was a visual delight and sounded very rich. The tuning was two unison tonics and the fifth above, giving the "double-string" effect plus an extra tone or two. However, tuning it was a nightmare, since the stick was rather flexible, and tuning one string would de-tune the others. I did on occasion get it in tune well enough to play, but it has long since disappeared. Most mouthbows "disappear" usually by being given away. The mouthbow is not too well known in this country, and most people, upon first hearing it, want one.

Those in America who have come in contact with the mouthbow have almost always heard only that used by the folk singer Buffy Ste. Marie . . . a little high-pitched affair

with a tiny range of available tones . . . very pleasant in its own way, but not at all typical of the American folk-tradition.

I have been told, and have often read, that the mouthbow has "always" been part of American folk-music, and though I have no reason to doubt this, I am surprised that only three or four reasonably well-known American folk musicians use it at all.

On only one occasion have I heard the sound of a number of mouthbows played at once in accurate unison . . . I think there were four in this case. I will always remember that sound as being both very beautiful and a bit frightening. On that occasion a number of those present remarked that they felt there was something "magical" about the sound, that there was some "power" in it apart from the tune being played. There certainly is something very special about it, and it must be heard to be believed.

Yet another friend tried adding gourds to the sticks of mouthbows. As I remember, his first attempt consisted simply of poking two holes in opposite ends of a gourd and pushing it to the approximate middle of the stick, where it proved decorative but acoustically insignificant. Later experiments did have some effect, but, as may be imagined, this effect was only the amplification of the fundamental tone of the string. We did not particularly want this, as the tune lies in the reinforced overtones.

I made a few attempts to provide one or two tall frets near the lower end of a short mouthbow, to allow changing the fundamental pitch during the course of a performance. However, this is still in its infancy, and unsatisfactory as yet. Experimentation goes on, and undoubtedly always will.

We have done endless variations on decoration . . . coloured string bindings, large carved or painted tuning-pegs, hanging cords, feathers, tassels, etc. . . . but the favourite bow remains a simple stick with the bark left on except at the top end, four to six feet long, with a single steel string, usually 6-gauge. Two or three of these always hang on the wall of the music building where I teach, and they are always handy at home.

I have made occasional trials at singing long tones while playing mouthbow, but have not taken this very far as yet, though it would seem to have interesting possibilities. I have heard others do it too, but this usually consists only of singing the tonic or fifth, and/or an occasional "holler" out of good spirits.

Our mouthbow tunes are almost entirely in duple meter, as this is the idiomatic way of handling a mouthbow. Now and then a slow triple meter occurs. Note that this is the same tendency exhibited in American plucked-dulcimer playing, and that there is an obvious similarity of texture, i.e. melody over drone, though otherwise they are radically different instruments.

The ging-ging

Many years ago, at the public library, I heard a recording of a large "sansa", and saw a fuzzy photograph of it on the record-jacket. Naturally I fell in love with this instrument at once, and set about making a modest example. I have been making them ever since.

The first model was very crude, consisting of a shallow box made of softwood. The top was spruce, $\frac{1}{8}$ inch thick. The back was of hard fibreboard, and the sides of sticks perhaps one inch square in section, glued up into a frame about five by seven inches, with top and back glued and nailed on afterward. There were no openings in the box. The tongues were slips of bamboo, around $\frac{1}{4}$ inch wide and of various lengths, shaved rather thin, with the bark left on. The tongues were held up at front and rear by two pieces of doweling which were flattened on one side to prevent rolling. There was a central hold-down of a third piece of doweling, held in place by two bolts which were fed from below through two holes near the edges of the box, then bent over like hooks

at the top. Fig. 2 shows a little solid-body instrument using this arrangement, which came about because my single photographic reference was too unclear for me to see the more usual arrangement.

This was a rather inefficient instrument, but I was nevertheless quite pleased with it. Chief among its virtues to me was the ease of changing tunings.

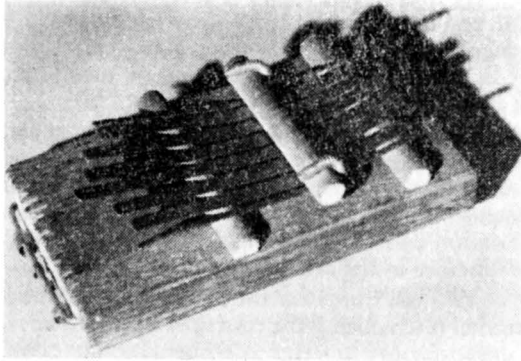


Fig. 2

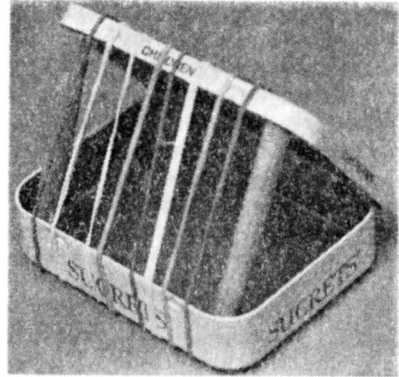


Fig. 5

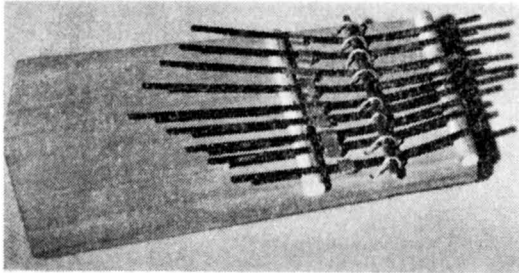


Fig. 3



Fig. 6

1.
 L R L R L R R R R L R R L R R L R

2.
 L R L R L R L R L R L R L R

"Major pentatonic" type. X marks tonic - at least as most people use it.

(These are relative pitches only)

"Hirajoshi" type. Either D or G can be considered as tonic when using this tuning on ging-ging.

Fig. 4

Like the mouthbow, this instrument rapidly caught on among my friends, but at first I was the only one to make them. Like so many other things, making a sansa-type instrument seems more difficult at first than it actually is. In the years since then, I have taught many others to make them.

Fairly early on, I became discontent with the brief duration of the sound given by bamboo tongues and wanted to try metal. I flattened out some pieces of heavy soft-iron wire cut from coathangers. These worked well enough, but not so well as I would have liked. The problem was partially with the softness of the metal, but also with my uneven job of flattening the wire.

Shortly thereafter, I discovered an unexpected source of sansa-tongue metal at the local hardware store. Hardware stores are, in fact, a veritable treasure house of parts for many kinds of home-made musical instruments. There is a plumber's tool, usually called a "snake", consisting of spring-steel tape approximately $\frac{1}{4}$ inch wide. This makes a very fine tongue material, if somewhat wider than the ideal. In a pinch, one can use large bobby pins, though the resulting crimp left at the centre when flattened out is most irritating.

More recently I have discovered a source of spring steel strips in more satisfactory sizes, and have learned to lace the central hold-down into place, which I understand is by far the most popular method in Africa.

Fig. 3 shows one model I make frequently, using the lacing method. This model is built for portability. It fits in a small space (note there is no box at all), sustains reasonably well, and is low in volume so that it can be played without disturbing others . . . a sort of pocket sansa. It must be held lightly, to permit maximum vibration.

It is at this point that the word "ging-ging" (hard G) comes into the picture. In the summer of 1972 I was sitting at the kitchen table, plunking away at one of the "pocket models" when a friend came to visit, said "Oh, how nice! a ging-ging!", and proceeded to play it as a background to, and even an occasionally meaningful amplification of, her conversation for the next few hours. Since this friend considers herself totally unmusical, and since it is almost unheard of in our culture to use music as an adjunct to everyday speech, the incident made a vivid impression on me.

At any rate, the name "ging-ging" seems so pleasant that we have adopted it as our term for all sansa-like instruments of local manufacture.

Like the mouthbow, the ging-ging is spreading slowly but steadily, as I give one away now and then, and often teach people to make them . . . presumably these people will teach others, and so on.

Most are impressed with the ease of retuning, and the variety this gives to the humblest playing ability. The more musically advanced appreciate the chance this gives to experiment with pitch relationships not ordinarily used in our music.

Those I have observed tend very strongly to play ging-ging in duple meter, with some excursions into 6/8, and 2-against-3 rhythms. Whatever the musical results, the ging-ging is eagerly welcomed and much enjoyed by all.

We have made little attempt to write fixed melodies for ging-ging, although each player has a small stock of fragments typical of his playing. (See Fig. 4 for examples of two of mine.)

Although any tuning is fair game, two are more popular than others: a pentatonic major and Japanese hirajoshi . . . see Fig. 4. These are arbitrarily given for eight tongues, as this is a common number, but these tunings are expanded at either end as desired for larger ging-gings. The largest models seldom exceed 15 or 16 tongues.

We have in some cases added "jingers" in the form of small rings rolled from strips of tin can metal. These are fitted either around the tongues proper, between front

bridge and central hold-down, or on a loop of wire attached to the body or box. Both methods can be seen in the photographs. I have been told that they are about equally common in instruments of African manufacture. The latter method cannot be used in the thin solid-body type, but when used in hollow-bodied instruments it has the advantage that the rings can be silenced at will by pulling the instrument back against the stomach . . . much like having an extra organ-stop.

For many year I have been heavily involved in teaching Javanese gamelan, and in making gamelan instruments. The gong-gong often reminds me of some of the sounds made by the gamelan. It occurs to me that one could make a small set of gong-gongs covering a wide pitch range, which could be played by several people as if they were gamelan instruments. Hopefully we will try this out before too long.

Several years ago, a friend of mine obtained an especially fine sansa-type instrument of African manufacture, from which he derived a great deal of enjoyment, carrying it about with him to play at odd moments. However, he decided that a lesser instrument would do for such casual use, and that he was a bit nervous about the possibility of losing the instrument in question. Accordingly, he made a sort of folk variant, consisting of a shallow metal box with hinged lid, (the kind cough-drops come in), two sticks to prop it half open, and some rubber bands. Fig. 5 shows an example. Tuning is done by tightening or loosening rubber bands, or changing to different thickness. While there may be a lack of musical finesse, it does make a pleasant sound, and is fine for a pastime while waiting for the bus, or for playing while out for a walk. When one becomes tired of it, everything can be disassembled and put into the box itself for easy carrying . . . almost a musical joke, but not quite.

Xylophone

Fig. 6 shows a fairly permanent example of an instrument which is more often of a temporary nature. This is a xylophone made of various lengths of tree limbs, preferably hardwood. The bars have been flattened somewhat on the upper and lower surfaces, by means of a spokeshave. The notch in the centre of the upper side is for tuning . . . the deeper the notch the lower the pitch. The pitch can be raised by cutting the bar shorter at both ends. Generally speaking, hardwood gives a higher pitch than softwood, with greater clarity and longer duration of sound.

The two notches underneath each bar are placed at approximately $\frac{1}{4}$ the total length of the bar.¹ These notches are intended to help hold the bars in place. Most often the bars are laid out on two rolls of rags, which in turn are laid directly on the ground. Thus the notches could have been omitted in this rope-suspended model, but it was felt best to cut the notches anyway, so as to allow the option of changing the method of suspension later if desired.

This instrument as yet has no proper name, nor is the tuning fixed, since it is considered to be a "tuned drum set" rather than a melodic instrument. However, there is a tendency to use a major pentatonic tuning, (e.g. C D E G A), or Javanese sléndro type, which is much the same idea.

The illustration shows a 'proper' example, but we have often made an emergency variant on this, merely selecting random lengths of wood from a scrap pile, and laying them on ropes, rolled cloth, etc., without any retuning at all.

Ideally, three people play this, and there should be about 7 to 12 bars of readily distinguishable pitches, lined up in order from lowest to highest. Each person has a mallet in each hand, most often just smaller pieces of branches, perhaps $1\frac{1}{2}$ inches in diameter and 12 to 18 inches long. Two players stand or sit at one long side, and the

¹ Ed.:2/9 is the usually accepted figure.

third player is opposite them. The idea is for each person to play a simple pattern, not over about six tones, over and over, changing to a new pattern at will (typically about every 10 to 20 seconds). The fun lies in seeing how complex the overall sound can get, and of course it can get very complex indeed, as the figures in use at any moment are likely to be of different time lengths, note values and metres, and changes to new metres occur at unpredictable times. Much 2-against-3 and 3-against-4 is used. One or more players may fall silent temporarily for the sake of variety. Far from sounding chaotic, the overall sound is that of great organization. Many Westerners are aware that there are some multi-person xylophone styles in Africa, and that the kind of playing I have just described has little or no similarity to African xylophone music. I have seldom suggested any particular way of playing these instruments . . . the above is just what usually comes out when three American amateur musicians get together over a xylophone.

The bars in the more sophisticated models, such as the one in Fig. 6, are patterned after a set of African bars I saw in the instrument collection of Wesleyan University, Middletown, Conn. The example in Fig. 6 was made in connection with a course in "basic woodcraft", given at Goddard College, Plainfield, Vt., by our librarian, Prof. William Osgood, who is seen playing it. It was left in place in the college's woodlands, for the pleasure of passers by. Since then many students have told me that they discovered it and have enjoyed it a great deal. At least one "jam session" is said to have lasted several hours.

The woods are deserted now, due to the heavy snows. I must remember to put on some new ropes in May.