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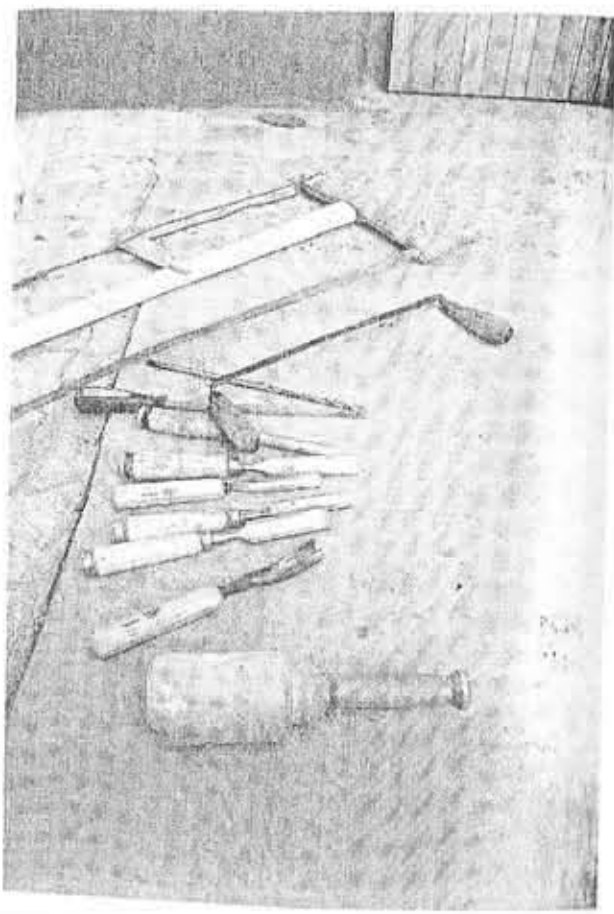
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the one given to me by *Jože Setničar*, the constructor of an impressive range of wooden horns made from tree branches, Setničar is from Kresnice, a village located quite near the geometrical centre of Slovenia and close to Váče, the site where the famous Hallstatt situla with a picture of a prehistoric pan flute and pan flute player was excavated.

In the mid 1990's Setničar, an amateur trumpet player, who had no knowledge of Valvasor's description, independently started constructing wooden horns from branches.

Walking in the nearby woods, he noticed pine branches laying around and they reminded him of trumpets. He gathered a few and after returning home cut them in two halves, chiselled out an adequate channel with a round chisel (in the same way he had seen a Swiss craftsman make a horn on TV), carefully glued the two sides together, and finished by drilling a hole for his own trumpet's metal mouthpiece. He inserted the mouthpiece and blew the horn.



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correspond to trumpets and/or flugelhorns used in brass bands. The alto horns are tuned in G (approx. 155 cm, the only one wrapped in cherry bark), F (approx. 175 cm), E flat (approx. 190 cm), D (approx. 210 cm), and the longest one in C (approx. 240 cm). Setničar refers to the lower tuned horns as *tenor/bass horns*; they are tuned in B (approx. 270 cm), F (approx. 360 cm, tenor/baritone horn), E flat (approx. 380 cm, bass/baritone horn) and D (approx. 415 cm, bass horn).

The biggest ones he has made are the *B-bass horns* (approx. 540 cm) which sound really impressive.

According to Setničar a lot of skill is needed to extend the tube to such lengths. We have to keep in mind that in all wind instruments (including horns) the tube must widen like a cone all the way from the mouthpiece to the funnel. Setničar emphasised that the secret of making a good horn lies in the width/length ratio per meter, and depends much less on how accurately the tube is hollowed out and its interior smoothed. Only if the conical path through the entire instrument widens constantly and "correctly". It will be possible to produce more than 4 or 5 pure tones in tune. But what exactly he means by "correctly" is something Setničar does not tell. That's his secret, he says.

It took him a long time to construct an instrument which could produce up to ten, even eleven distinct tones. And he is also convinced that only a properly made horn can sound good in the whole range of pure tones, and that it can even take forced blowing without any major distortion of the sound.

Although Setničar, being a skilled trumpet player, succeeded in blowing ranges of *aliquote tones* relatively soon, he realised that the main problem was in fact to reach the correct *basic tone* (an octave above the pedal-tone, which is always extremely hard to blow). It always sounded too low and Setničar used to call these false tones "*crap tones*". He figured out that sometimes the solution has to be very drastic: cut off a large section of the tube at the funnel end and replace it with a new one. "It is the construction as a whole that makes one instrument better than another one", he says.

Jože Setničar believes that his biggest achievement in the *construction* of the horns is the way he "bends" the branches, i.e. the way he assembles the different parts of a tube. More often than not it are the knots in a branch which suggest, what to do and how to do it, but occasionally it is better to construct the horn in such a way that the musician can play it with more ease and better. Here, he can use all his imagination, experience and skills and that is when he enjoys his work most. And what is of the utmost importance to him: the quality of a horn's sound is not affected whether the tube is bent or straight.

The reasons why he experiments with the shape are manifold:

- it is easier to transport bent horns than straight ones,

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dering the use of standardised joints to join several, different parts of his instruments in order to achieve the desired length, but it is extremely hard to obtain a conical path all the way down the tube and to construct technically faultless instruments that way.

c) *Copper inserts* connecting two parts of a tube. This is the easiest way to combine joining methods and also the best way to escape any "steps" (disturbances) inside the tube. According to Setničar, these quite short, round inserts do not affect the technical characteristics of the instruments.

d) *intermediate inserted piece*. Mainly used in the upper section of a tube, 30 to 40 cm from the mouthpiece. It's main purpose is to achieve the best possible tuning for a group of horns.

A few years ago Setničar patented his original ideas with the Slovenian Intellectual Property Office. To date he has developed 13 types of horn of different lengths, tuned as follows:



Fig. 4: Score of St. Premr's Zdravica, Slovenia's national anthem, Arranged for and dedicated to Setničar's Wooden Hornists.

On wooden horns, made from tree branches, in Slovenia

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Aerophones of different types are very common in Slovenia's musical tradition. We can find them among the instruments accompanying a range of popular feasts connected with calendar holidays, and they also feature in *folk music ensembles* accompanying dances on various occasions. *Soloist aerophone instruments* are not common in the Slovene instrumental tradition (with a few exceptions: *trstenke*, a special Slovene, polyphonic (V-shaped) pan flute, various *musical toys* from reach tradition of children's musical toys, and various *signal whistles* and trumpets).

Flutes and *reed pipes* of different types are the most popular aerophones in Slovenia. Of the traditional wind instruments the *wooden horn* is probably the most interesting one. These horns were made from suitable *tree branches* (some over two metre long!) and they differ greatly from the Alpine horns, made from pieces of wood, which are common in Switzerland and in other parts of Europe (Poland, Romania, the Baltic countries, Scandinavia, etc.).

The first mention of a *wooden horn* in the Slovene territory dates back to the 15th century. Later, the instrument was described in detail and documented in Valvasor's famous *Die Ehre des Hertzogthums Crain*, published two centuries later (in 1686). On page 291 of the sixth volume of this monumental work (Slovene translation: *Slava vojvodine Kranjske*) Valvasor, a polymath and dedicated inventory maker with an excellent eye for detail – an ethnographer avant la lettre – writes about the way people in Crain (Carniola, present-day Slovenia) make their horns: "They take a piece of wood which is a fathom (6ft=1.83m) or a fathom and a half long, and curved on one side or straight. It is then hewn to make it narrow at the upper end and wide at the bottom end, split in two halves and hollowed out with a curved knife, after which the halves are glued together again with resin. It is then wrapped in cherry bark and there it is – a fine artistic horn..."

The above description, written over three hundred years ago, is nearly identical with

On wooden horns, made from tree branches, in Slovenia

The sound the horn produced was pleasant and even a bit smoother than that of his own wind instrument, but the tones it produced were not of a definite pitch. The result was the same as when blowing an animal horn (even with a mouthpiece). Setničar considered that this first step, although not completely successful, had provided him with a true challenge. He started experimenting, using different kinds of wood (beside pine he also used beech, maple, cherry, and even juniper), cutting only adequately dried wood (dried in the shadow so as to prevent cracking), and constructing instruments of different widths.

His most interesting experiments concerned the *length* of the tubes. He established that the length determined the pitch of the instrument. The smallest horn he made was a *soprano horn*, about 95 cm long, which he called "piccolo", and tuned in *E flat*. Two other soprano horns he made are tuned in *D* (approx. 105 cm) and *B* (approx. 130 cm). According to Setničar, the main *high-pitch* horns are the so-called *alto horns* which



Fig. 2: Jože Setničar among his

On wooden horns, made from tree branches, in Slovenia

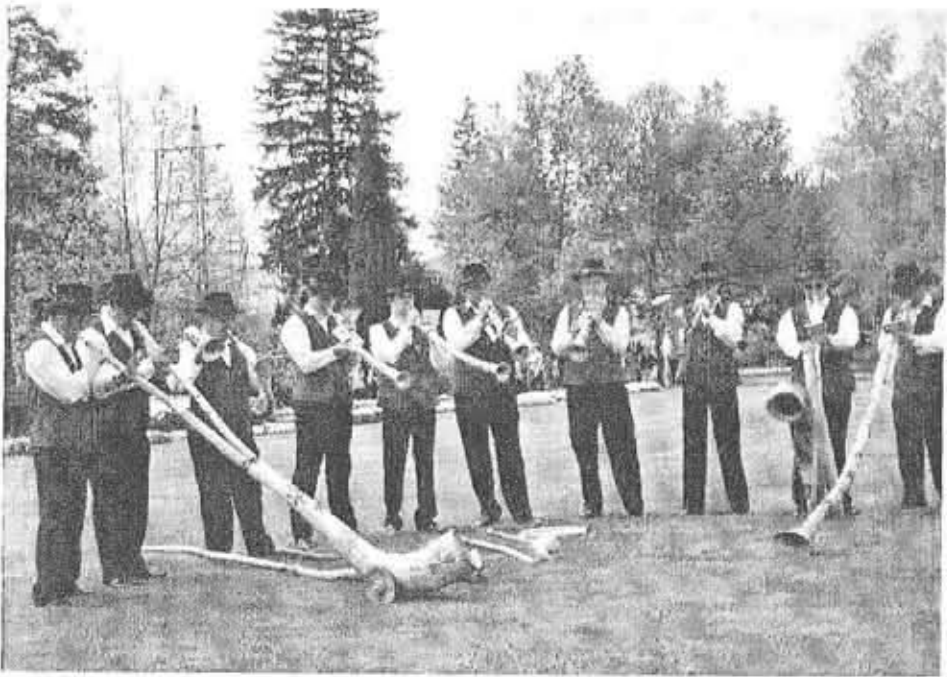


Fig. 3: Setničar's Wooden Hornists.

- it's more convenient to play them. Bent horns are better adapted to the musician,
- he can make instruments of any desired length (i.e. desired pitch) in this way,

tubes can be extended in several ways:

- *solid joints* (gluing two parts of a tube together). Setničar practices solid joints when there is no need to disassemble the tube and subject to the natural shape of the branch he uses. The latter leads him to the basic idea about the final design of the instrument,
- *combined joints* (using special joints) to achieve better results: they allow tuning corrections within a group and make it possible to combine different parts of a horn in order to obtain a desired length.

Combined joints can be executed in different ways:

- a) *male-female joints*: these he used in the past, but turning curved branches proved too complicated and the connection in the tube usually was not tight enough.
- b) *male joints*: these are joints as well as tuning devices and therefore more practical. Most of Setničar's recently made instruments have this type of joint. Setničar is con-

On wooden horns, made from tree branches, in Slovenia

- G-C-E,
- G-D-G-H,
- D-A-D-F sharp,
- F-H-E-G sharp,
- F-C-F-A,

He thus succeeded in covering not only all the tones of the diatonic scale but also all the other tones he needs. By appropriately combining different instruments within a group, the Hornists are therefore able to play practically every kind of music they want. A perfect example of how Setničar achieves this is the "orchestra score" of our national anthem, based on a piano score and written for Setničar's ensemble of Wooden Hornists.

Setničar's Wooden Hornists actually perform music in a way which corresponds with the ethnographical data about how traditional wooden horns were played in Slovenia. The above-mentioned Valvasor describes this (as early as 1686) as follows:

Whenever millet is threshed or flax broken ...boys come to blow their horns. They play in pairs and in tune." Further in the text he adds: "...In Gorenjska, too, they blow different melodies on horns, and they do it as well and as pure as a real trumpet player on a real trumpet..."

It is quite obvious that Valvasor distinguished hand-made wooden horns from the brass or wooden trumpets made by craftsmen, and also a group blowing their horns from the sound of skilled trumpet players.

Documents in archives around Slovenia show that wooden horns were mainly used by shepherds, who blew them every morning before they left for the pastures and again in the evening after returning. But there are no reliable data whether they played music and/or tunes or used their instruments for signalling only. Anyhow, Setničar's Wooden Hornists can be seen as one of the links in the broken chain of our musical tradition, and they are undoubtedly the result of his admirable personal efforts to revive the wooden horn.