

The Conch
Its Use and its Substitutes from Prehistory to the Present Day
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Of all the prehistoric trumpets, perhaps the first, certainly the most widespread in use, with some interesting gaps in its distribution that we shall come to later, and perhaps often the most important trumpet, has been the conch, a trumpet made from the shell of a marine gastropod. This use of such shells goes back to remote antiquity, and the conch is certainly one of mankind's earliest trumpets. It is far easier to knock the tip off the spire of a shell than to remove the point of a cow horn, or of a goat horn, or of an elephant tusk. It is easier still to knock, chip, or drill a hole in the side of the shell, but we have no evidence for side-blown shells outside of Oceania and a small part of East Africa. There is one shell trumpet known from the Upper Palaeolithic period and many from the Neolithic in various parts of Europe, some of them hundreds of kilometres from the sea. Thus these conches are far earlier than Tut-ankh-amūn's trumpetsⁱ, which must date from somewhere before 1343 BCE, the date of the Pharaoh's deathⁱⁱ, and are also some twelve hundred years earlier than the Danish lurs, which, dating from around 800 BCE, and which are otherwise the oldest surviving European hornsⁱⁱⁱ.

Since many of these shells were found in graves, and at other ritual sites, it has been presumed that they were of some importance, and that they were probably used as ritual instruments. Because some were found quite a long way from the sea, this is also an argument in favour of their importance. If people take the trouble and make the effort to transport shells over long distances, and presumably devote some of their property to trade or barter for them, then surely they must be of some importance, and further, it must be culturally important to use a shell, rather than any other type of horn, which again suggests a cultic use. Certainly, also far away from the sea, the same species of shell is still, or was until very recently, an instrument used in a superstitious rite whose origin must originally have been religious. In what is now the Czech Republic we have records of the conch being blown to avert thunderstorms^{iv}, just as specific church bells were rung in some French and Swiss villages for the same purpose. In the eighteenth century, Vivaldi, who had musical connexions with Bohemia^v, wrote a concerto, *Conca*,^{vi} illustrating exactly this use of the conch, imitating in his music, which is just for string instruments, both the storm and the

sound of the conch, which plays repeated octaves. The fact that the high note comes first, although it is usually easier to start on the low note and push to get up to the high note, suggests to me that Vivaldi was very deliberately imitating something that was known to him, something that he had heard.

The prehistoric connexion most familiar to us in Europe, from myths and legends, is that of Poseidon or Neptune. The conch was associated with Poseidon in both his aspects, as a horse god and as a sea god, and perhaps it was the horse god for whom those Hungarian shells were used. Poseidon is by no means the only deity who was associated with a conch, even among the Greeks, for the conch was also strongly associated with the Zeus cult, and there is a well-known seal carved as a priest blowing a conch from the Zeus cult site on Crete, the Idean Cave ^{vii} and large quantities of conch fragments have been found at Cretan sites. We know how important the bull cult was on Crete, with pairs of horns on every roof; nevertheless, the conch seems to have been much more important as a cultic trumpet than horns from bulls or other *bovidae*.

Going further afield and beyond the confines of Europe, in the Ramayana and the Mahabharata, the great Indian epics, and especially in the Bhagavat-Gita, each of the heroes had his conch and the conches, like the swords of our Arthurian legend, each had its own name^{viii}. The most famous of the heroes, of course, was Krishna who, in the Hindu pantheon, became equated with Vishnu. His conch, Panchajanya, was traditionally the *Turbinella pyrum* (Linnaeus), the smooth, white shell which is sacred today over all of India and Tibet even though it is only fished from the seas of Southern India and Ceylon. It is the heaviest of all shells, and thus the most trumpet-like in sound, for when one blows an instrument one creates a certain amount of energy. The more of that energy that is dissipated in shaking the material of which the instrument is made, the less is available to come out in sound. Thus if the body of the instrument is made of a material that is particularly dense and rigid, like that of the *Turbinella pyrum*, the body does not shake and almost all the energy is concentrated as sound. When the shell of the Indian *chank* is coiled in the opposite way to the normal, as rare examples do (Krishna's is always represented as such), it is the most valuable of all conches, indeed of all trumpets, for these sinistral shells are said to be worth their weight in gold.

Conches are used all across South-East Asia, where again they are blown today in religious rites, because of the fusion of elements of Hinduism, including the conch, with Buddhism. In Japan, just as in India, the conch was originally a war trumpet, but is now a

priestly instrument. In Oceania, where prehistory gave way to recorded history only a century or so ago, conches again were sacred. On Malekula, in the New Hebrides, as the late Raymond Clausen has reported ^{ix}, signals, both ordinary and ceremonial in the Maki rite, are blown on the conch by hand-stopping, just as Mozart's horn player hand-stopped the french horn to produce pitches between those of the harmonic series. Headhunters' signals on New Guinea, as reported in *Man* by Beaver and Chinnery^x, seem to have been rhythmic rather than varying in pitch, with codes of different rhythms to signal how many heads a returning war party has taken or, of course, lost. Hand-stopping has also been reported from the Solomons ^{xi} and from other islands. The shells used on Malekula and New Guinea are normally the *Charonia tritonis* (Linnaeus), and most of the Oceanic tritons are blown from the side. Whether a shell is side-blown or end-blown may depend on the morphology of the shell as well as on the cultural preference of the people; some, like the *Turbinella*, can only be blown from the end simply because the spiral is so compressed that there is no access from the side.

The Japanese *horagai*, incidentally, is one of the few conches to have an added mouthpiece. Others are the Czech thunder charm, which has a metal mouthpiece, sometimes of pewter, in much the same shape as a normal European trumpet mouthpiece, the Tibetan ^{xii}, which often have an elaborately built-up mouthpiece of metal sheet, sometimes filled with some substance such as wax or pitch to give it greater solidity, and occasionally the New Zealand Maori, at least one of which, in the British Museum of Natural History, has an added mouthpiece of pottery.

But returning to Oceania, on Fiji a special use is made of a special variety. The Fijian *Bursa bubo* (Linnaeus) is the only known variety of conch which has a finger hole. This is drilled in the parietal wall, the sidewall of the last whorl. There is some evidence that such shells were used as war trumpets, but Karl Erik Larsson cites much evidence ^{xiii} for their cultic use and shows that many were found on temple sites. Unfortunately, the original religion of the Fijian Islands, as in so many other places, was firmly abolished by the Christian missionaries and no information about its practices and beliefs has survived. In this respect, at least, the Roman Catholics have a better record than many of the Protestant sects, for one of the major anthropological journals, *Annali Lateranensis*, was published in the Vatican, and the Romans do try to record information about local cults, and often try to meld them into a fusion of Paganism and Christianity, rather than abolishing them. However, on Fiji the main missionaries were Wesleyans, and little record was kept. We simply do not know why the

Fijians should have wanted two notes approximately a minor third apart, for that is the normal interval (often which I have blown and recorded, the interval produced by opening the fingerhole varied from 264 cents to 377, with most falling between 280 and 328. Only one, at 177 cents, fell out of this range. An equal-tempered minor third is 300 cents). Nor do we know why they decided to achieve this by a fingerhole rather than by hand-stopping as in the rest of Oceania. This is one of those problems which are never likely to be solved.

It is when we get to the Americas that we find the best-known examples of a phenomenon which, to my mind, proves beyond doubt the ritual or ceremonial importance of the shell trumpet, just as the importance and monetary value of the sinistral *Turbinella pyrum* does in India, as does the distance from the sea there, in New Guinea, in Bohemia, and in Hungary. If shells are to be carried and traded over such distances, they do have to be of some importance, and indeed of some value, to make the effort worthwhile. And if people take the trouble, and develop the skill, to copy a shell precisely in pottery, then surely this would only be done if the object were of the greatest importance. I have one pre-Columbian Peruvian example myself; it was put through a hospital scan for me in Oxford. I know a number of other, similar, pottery shells from Peru, and one, from the University of Pennsylvania Museum was X-rayed for me from the end. Not all Peruvian shells are as elaborately made as that. One in the Ethnographic Museum in Göteborg in Sweden^{xiv} just has a chamber below the mouthhole and then the body whorl, without the internal *columella* and other whorls. It nevertheless sounds as much like the natural conch as the more elaborate examples, which raises questions, to which I shall return, about the acoustics of the conch. I had thought that this triumph of pottery technology was peculiar to the pre-Columbian Moche who were among the greatest potters the world has known. But this is not so. There are other, perhaps slightly less elaborate examples, from elsewhere in pre-Columbian South and Central America. Sir Arthur Evans illustrates fragments of Cretan pottery conches^{xv}, though I do not know where an example may be found. I have been told of examples from India, but I have not seen any. Recently, I acquired another pottery conch from Khmer Cambodia, three or four centuries more recent than those from Moche, and that has also been scanned for me – while buried for centuries it has become blocked by earth or some other substance which I have not yet dared to try to remove.

We know, too, of other substitutes for shells. In Papua New Guinea the use of wooden side-blown trumpets as substitutes for a conch is well known, and among the Asmat people

there are end-blown bamboo trumpets which are also said to be conch substitutes.

My Asmat bamboo trumpet, like the Göteborg pottery conch, raises a distinct acoustical problem. The pitch of the bamboo trumpet, which is about 400 mm long and about 60 mm in diameter, is the same as that of my biggest side-blown *Charonia tritonis*. Why? If one were to uncoil the conch and measure its tube-length, it would be much longer than the bamboo. This, though, raises the question of what is the length of a helix? Imagine for a moment, and for simplicity of analogy, a spiral staircase – is the length the distance covered by one hand on the central pole, or is it the length measured in the centre of each tread, or is it the distance covered by the other hand along the wall? However, of my two instruments, their volume, their cubic capacity, is much the same, at about one litre. Is the conch a vessel trumpet, as the ocarina is a vessel flute? If it were, the pitch would be controlled by its volume, not by its length, and all would be easily explained. I raised this question many years ago in *World Archaeology*^{xvi}, but nobody has ever commented on it or responded to it. Perhaps because nobody has ever raised before the concept of a vessel trumpet – can such a thing exist? Not, certainly, in the conventional sense for a trumpet must have a distal orifice, which a vessel flute need not have. Another of our problems.

I mentioned just now the pottery fragments from Crete. There are, in the Heraklion Museum there, stone copies of shells, one of alabaster, and another, found at Haghia Triada, made of obsidian or volcanic glass from the Aeolian Islands. I can't really believe that it was possible to carve the full shape of the shell in stone, still less in obsidian, though Arthur Evans refers to the latter as 'an almost exact copy of the ... shell known as *Dolium perdid*.'^{xvii} I have not had the opportunity to examine them, but I assume that they are just hollow vessels with the outside shaped like the shell. Presumably they were libation vessels, as the bronze copies of the giant land snail shells were in Benin in Nigeria.

These bring me to another curious aspect of the conch, and that is where it is NOT blown. One is so accustomed to it as a universal trumpet wherever there is sea, and for that matter from a number of areas a good distance from the sea, as in Tibet, Bohemia, Hungary, upland Peru,, Cambodia, and Iowa, where I bought one that had been used as a signal to call the farm hands to meals, that it is a surprise to find coastal peoples who have no knowledge of the conch. There are some shell trumpets known in North America, from before the coming of the white man, but none on the North-West Coast where many ingenious wind instruments were made by the Haida, Tlingit, and other tribes. There are no conches anywhere in Africa,

save for Madagascar and for only a part of the littoral of East Africa, from Kenya to Tanzania, where they are used by ferrymen, fishermen, and other sea-goers. None along the Red Sea coast of Egypt, nor of the Sudan, nor of Somalia, none on the coast of the African mainland any further south than Tanzania, and none anywhere in the whole length of the West African coastline that has ever been reported. There are seaweed trumpets in South Africa (Percival Kirby told me of trying to find one four metres long on which to play the Mozart horn concertos, but all were shorter than that) but no known conches. Nor, to my knowledge, are the Nigerian giant land snail shells ever blown, neither the natural ones nor the bronze copies, and the latter are certainly big enough to make effective trumpets.

Most curious of all there is no reported use on the southern littoral of the Mediterranean. On the northern shores, the conch trumpet is used everywhere. It was, and it is, used in Spain, where it is used by fish-sellers and by seamen; it has been used in Italy from the Neolithic period until today, especially at the Venus-cult festival of the Piedigrotta near Naples, where they use conches which are waste products, for their lips have been cut off and used to make cameos, and the rest of the shell would otherwise be thrown away ^{xviii}. The Piedigrotta festival is a good example of the Roman Catholic practice of absorption of Paganism into Christianity that I mentioned earlier, as is the fact that pottery conches are still being produced in some parts of South America. I have already mentioned Greece and Crete. There are well-known archaeological examples from Israel, including one from Hatzor ^{xix} and another from the Philistine temple site at Tel Qasile^{xx}, which perhaps were used in the Dagon cult – Dagon was a fish-god. But I know of nothing from Egypt, nothing from Libya, nothing from Tunisia, nothing from Algeria, and nothing from Morocco. Why not? They use metal trumpets in all those areas and in Egypt they have done so from ancient times, as we know from many illustrations and from the trumpets found in Tut-ankh-amūn's tomb. Why not shells? I cannot believe that the mollusc is so fussy in its habitat that it never approaches the southern shores. Yet another of the many problems to which we do not know the answer.

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Much more information on conchs will be found in my forthcoming book *The Conch Horn*.

- Hans Hickmann, *Instruments de Musique, Catalogue Général des Antiquités Égyptiennes du Musée du Caire*, Cairo, 1949, 143-5
- ii Christiane Desroches-Noblecourt, *Tutankhamen*, Connoisseur & Michael Joseph, London, 1963, 215.
- iii H.C. Broholm, W.P. Larson, G. Skjerne, *The Lures of the Bronze Age*, Gyldendal, Copenhagen, 1949.
- iv Ludvík Kunz, *Die Volksmusikinstrumente der Tschechoslowakei*, 1 (Handbuch der europäischen Volksmusikinstrumente 1/2) Deutscher Verlag für Musik, Leipzig, 1974, 130-133.
- v He wrote a number of violin concertos for the Bohemian virtuoso Johann Georg Pisendel, who had studied with him in Venice.
- vi *Concha* in B flat, Ryom 163, Pincherle 410, Fanna XI:5. Published by Ricordi in Tomo 9a, 1947.
- vii Sir Arthur Evans, *The Palace of Minos* Vol.IV, Macmillan, London, 1921-3, p.344 fig.288.
- viii For all the Indian material see James Hornell, *The Sacred Chank*, Madras Fisheries Bureau, *Bulletin* 7, 1914.
- ix Alas, after many years of promised publication, still only verbally. His working notes are now deposited in the archives of the Pitt Rivers Museum, Oxford.
- x In *Man* 1916:6 and 1917:55 respectively.
- xi Verbal communication from J F Peake at the British Museum of Natural History.
- xii Mireille Helffer, Mchod-rol, CNRS, Paris, 1994, 105-118.
- xiii In his *Fijian Studies*, 'The conch shells of Fiji', *Etnografiska Studier* 25, Göteborg Etnografiska Museet, 1960, 119-147.
- xiv No.57.14.3, very similar in appearance to fig.109 (p.231) in Karl Gustav Izikowitz, *Musical and other Sound Instruments of the South American Indians*, Göteborg, 1935.
- xv *The Palace of Minos* Vol.I, fig.168.
- xvi Vol.12, no.3, February 1981, p.277-8.
- xvii Evans, *The Palace of Minos* Vol.IV p.110, illustrated in Vol.II pl XXXIb. The shell is Heraklion Museum 360; there are two alabaster examples there, HM 177 & 45, and there are also obsidian fragments, HM 1008.
- xviii There are examples with precisely this description in the Pitt Rivers Museum, Oxford with parts of the lip sawn off to make a cameo, and the tip of the spire removed to make an embouchure or blowing hole.

xix See Bathya Bayer, 'Conchit-haneshifah shel Hatzor', *Tatzlil* 3, pp.140-2, 1963.

xxAmihai Mazar, *Tell Qasile*, Museion Ha'aretz, Tel Aviv, 1983, p.19, illus p.25