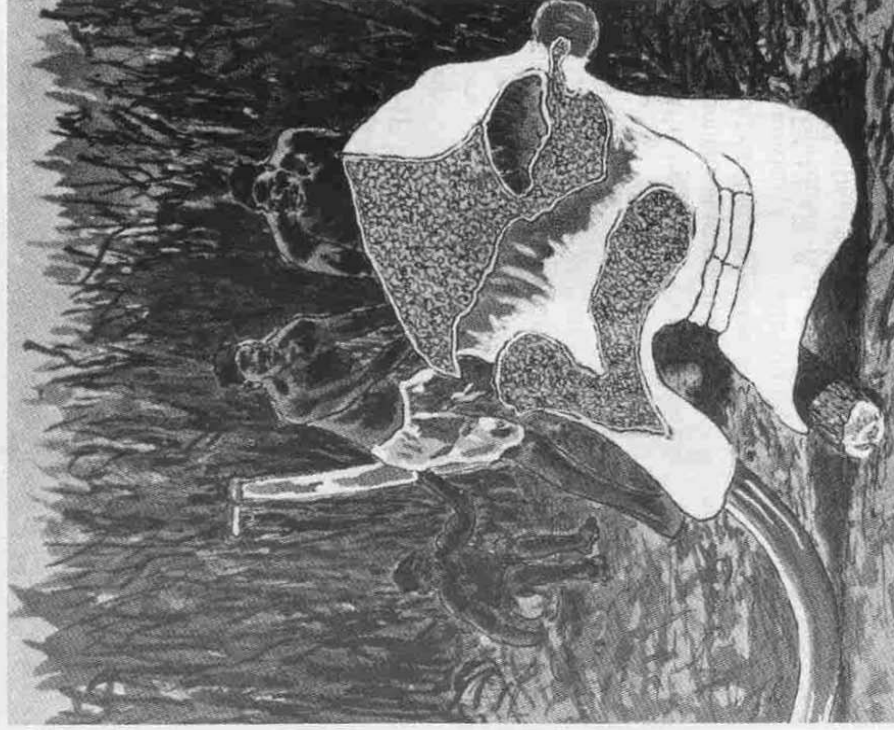


The rod eventually reached hard bone and required many heavy blows to break through to the brain. I spoke to one of the team, who is very experienced in issues of bullet performance, and he was adamant that a hunter could not place a .22LR bullet into the ear to reach the brain and felt it would even be unlikely to reach the brain if the muzzle were placed in the earhole.

Perhaps then a .22 bullet could travel through the eye and along the path taken by the optic nerve to the brain. It seems unlikely that this is possible. Firstly, the bullet would have to travel right through the fluid-filled eyeball, fatty tissue in the eye socket, and then either penetrate the bone of the eye socket or find a path through the optic foramen (the hole through which the nerve passes). This hole is only about the diameter of a .22 bullet. It would be impossible to deliberately place a shot through the eyeball, which can deflect it, to then travel through the foramen.

To investigate this further, Ganyana, a regular *Magnum* contributor, kindly made a dried-out elephant skull available to me for investigation. A .22LR standard velocity solid bullet was fired down the earhole along the auditory canal and was found to have punched through the bone into the brain cavity. It certainly appeared as if the .22LR was much more effective than the ramrod, but in a live, erect elephant it would not be possible to fire a bullet into the earhole to gain entry to the auditory canal. The outer ear effectively protects the earhole and also the correct angle would be impossible to achieve from a hunting position.

The optic nerve route was found to be even more impossible. The path of the nerve is anything but straight and very long. Some of the bone angles are so extreme that a .22LR could never penetrate and follow the nerve and even heavier calibres would also probably be unable to follow the optic nerve route.



Drawing of a bisected elephant skull done by "Karamojo" Bell, taken from his book *Bell of Africa*.



Gregor Woods points to the ear hole in an elephant skull, illustrating the amount of bone to be penetrated by a bullet to reach the brain.

One aspect of skull penetration must be stressed and that is the extreme hardness of elephant bones. The armour-plated effect has frequently been shown to cause considerable deflection of even heavy calibre bullets. Even if a bullet can penetrate and also continue in a straight line, much of its momentum and energy will be absorbed by the honeycomb and jelly-like substance found within the skull. Testing .22LR bullets on old, dried-out skulls is very different from their likely performance on skulls covered with skin, muscle and tendon. Unfortunately, even if one had a newly killed elephant available, finding a .22LR bullet in the head would be a little like finding a needle in a haystack.

Hunters often speak of a heart/lung shot as if they were identical. As the consensus of opinion amongst experts is that a .22LR lung shot is unlikely to be effective, it is necessary to consider a possible heart shot in isolation. Frankly the idea of a heart shot on an elephant with a .22LR seemed almost ludicrous until I saw a letter from John Northcote, a well-known and respected PH from East Africa, recently published in *African Hunter* (Vol 8 No1).

He related the following, extraordinary story:

"About the year 1936, a South African in Kenya was found with the tusks of five elephants in his truck. He did not have any elephant licences nor did he have a rifle heavy enough to shoot elephants. He was charged with poaching five elephants.

"On being asked where the heavy rifle was, with which he had shot the elephants, he produced an old Belgian made .22, which could only fire the .22 short rounds. He then explained in detail how he had killed the elephants.

"Game warden Thomas Carr Hartley, (commonly known as Carr) was at that time doing elephant control on shamba raiders in the Meru area. He was given the .22 rifle, instructed in the method of hunting used by the accused, and asked by the chief game warden to see if it was possible to kill an elephant in this manner.

"With a reliable game ranger armed with a heavy rifle backing him up, in case of any mishaps, Carr Hartley got in close to a shamba