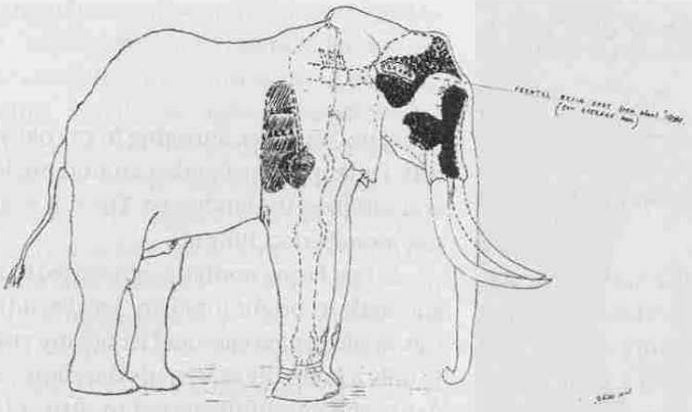


Illustration taken from Bell's book *Bell of Africa* showing location of brain, heart and lungs.

raider, and when it put its front foot forward, exposing the thin skin covering the ribs, he fired between two ribs into the heart.

"The elephant ran 150 to 200 yards and collapsed. Carr repeated this on four other elephants to prove the point. The distances run by elephants after being hit depended on where the bullet entered the heart, the higher in the heart the shorter the distance run.

"On this evidence the accused was convicted of poaching. This was on record at the Kenya game department."

This is a remarkable account in view of the fact that we are now discussing a .22 short (27 to 30gr at 1000 to 1100fps) with even less penetration than the .22LR.

Presumably the poacher and Carr were very experienced with regard to the position of the heart relative to external features. Even then I am concerned about the remark: "... he fired between two ribs into the heart." I cannot remember seeing ribs visible on an elephant and a study of photographs reveals none. How could the shots have been fired accurately between invisible ribs? Perhaps several shots were fired in the hope that one would slip between the ribs. Perhaps several elephants were shot at until the desired result was achieved.

My view is that the only way to expect to get a shot between invisible ribs would be to fire several quick shots at the heart with an auto-loading rifle. There would then be a chance of one of the shots slipping through the intercostal muscles between the ribs. At that time the Belgians made the excellent Browning autoloading .22 rifle in models A and B. Both models could be bought in either .22LR or .22 Short. The LR model would not feed the .22 Short and the LR ammunition could not be used in the .22 Short model. I mention this because Browning also made a .22 pump action in which both types of ammunition could be used and even mixed in the magazines.

Perhaps the Belgian rifle referred to was a Browning auto-loader and the poacher and Carr fired several rapid shots into the heart area?

Fortunately I had the opportunity to discuss this issue with John Northcote, who wrote the letter. He reminded me that if one is very close to an elephant (5 to 10 metres) one can just see the ribs when it moves its front foot forward. The exposed skin in that area is much thinner and paler in colour than skin elsewhere (with the exception of behind the ear) and this makes it easier to penetrate the skin and to see the ribs. John did not think the rifle used would have been an auto-loader, but a bolt action and that would effectively rule out rapid follow up shots.

Even if the shots were placed accurately, the bullet would have to penetrate very tough skin, fat, and intercostal muscle even to reach the lungs and heart. It is a very long distance and the gaps between the ribs are much narrower than the ribs themselves.

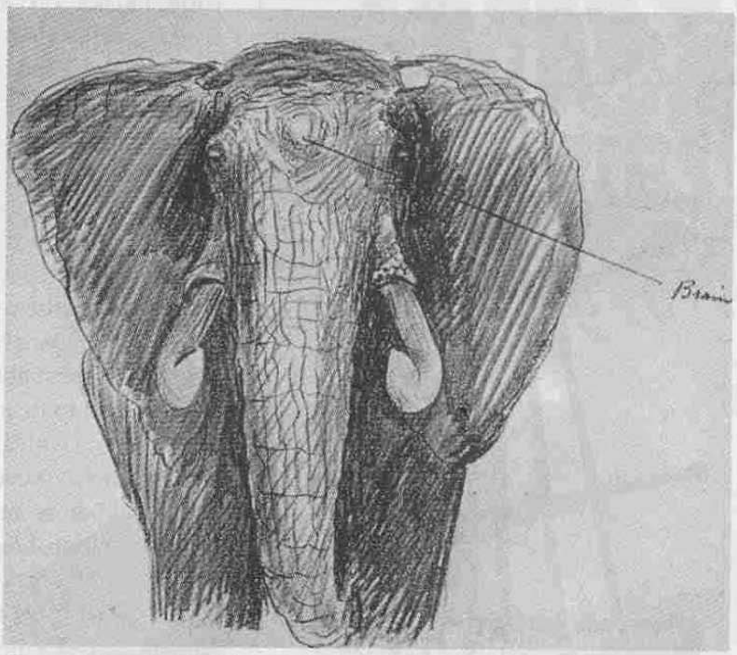
There have been reports of animal hearts, especially buffalo, being hit with big calibre bullets without a rapidly fatal effect. How would one expect an elephant heart to react to a .22LR or .22 Short?

A clue lies in the penultimate paragraph of John Northcotes' letter. Why did higher heart hits prove more effective? Frankly a .22LR would be expected to have little effect in the thick muscle of the lower heart. Ganyana has looked at the blood vessels entering and leaving the upper heart and found them surprisingly thin and fragile. It seems likely that damage to the upper heart or blood vessels would be greatly increased by the enormous blood pressure of the beating heart. Probably the best shot would be through the aorta where it exits the heart.

The episode related by John Northcote was related by Carr to his son Pat, who fairly recently related it to John. He has now kindly shared the account with the readers of *African Hunter* and indirectly now with us. As the account formed a basis for evidence to convict in a Colonial court it must have been plausible.

So there we have it. It appears to have been done many times, which surprises me, but I am reluctant to concede this lest it should encourage others to attempt this unethical and illegal act.

Animals should not be used for testing and experimenting with marginal hunting techniques and unsuitable weapons, calibres and bullets. In my view one should only use a suitable weapon which *should not* require back-up from another. By all means have a friend



Frontal view of a bull elephant showing brain size and location, taken from Bell's book *The Wanderings of an Elephant Hunter.*

or PH as a back-up in case of a poor shot, or unusual animal response, but not because you cannot rely on your weapon to kill cleanly. In the case of the Kenyan official, his actions could perhaps be justified as he may have felt that it was necessary to prove that the poacher concerned really had been killing elephants with a .22 Short. It is significant that he only did his testing with a substantial back-up.

We should never forget the primary ethic! I only hope this response to a question does not encourage irresponsible use of unsuitable calibres, or we may soon be investigating the use of a .177 air rifle on rhino. m