THE ELECTROCUTION OF WHALES

[Summarised from information provided by Dr Harry R. Lillie, surgeon to the Antarctic whaling fleet of Messrs Christian Salvesen and Co. in 1946–47, and from an unpublished compilation by Major C. W. Hume, Chairman of the Universities Federation for Animal Welfare.]

Modern whaling is based on the use of the harpoon gun. The system is obviously crude, and is now seen to possess certain technical defects. In particular, the explosive in the head of the harpoon almost always causes rupture of the gut and dissemination of gut bacteria. These give rise to an increased rate of putrefaction of the carcass and to a consequent fall in the quality of the meat which may be obtained from it for human consumption. Further defects in the system are the great amount of time which is often spent in despatching a single whale after it has been harpooned, and the rapid wear of cordage. Both humanitarian and economic considerations are now leading to renewed interest in alternative methods of killing whales. Dr Harry R. Lillie, Major C. W. Hume, and United Whalers Ltd. have been particularly active in arousing interest and initiating experimental work. The subject is not entirely a new one, and considerable work was done before the war by certain German whaling interests.

Investigation has followed four main lines, the last of which is by far the most promising.

(1) A suitable quantity of poison, most efficiently curare or hydrogen cyanide, might be fired as a capsule into the whale from a distance. The poison would cause rapid paralysis of the whale, prevent diving, and so allow the catching vessel to close in and kill at once by driving the harpoon into a vital spot at close range. Curare would seem to be ideal physiologically but is extremely expensive. Hydrogen cyanide would probably be too dangerous in view of the possibility that pockets of it might remain in the muscle, eventually to reach a human consumer.

(2) A quantity of compressed gas, such as carbon dioxide or nitrous oxide, might be fired into the whale in a container, there to burst, with the object of producing a gas embolism or giving excess bouyancy to prevent diving. However, to produce buoyancy, far too big a gas container would have to be used. Nevertheless, carbon dioxide might act both in the formation of an embolism and as a narcotic. An added advantage of the use of carbon dioxide would be in producing a slight increase of acidity in the meat, with consequent improvements in keeping quality.

(3) The bursting grenade head-charge of 1 lb. of powder in the standard harpoon might be replaced by a reduced but more lethal charge of high explosive. This substitution, however, would not avoid damage to the gut, and would create danger in subsequent handling if a misfire became lodged in the whale.

(4) Electrocution seems to be the most likely solution of the major problem, with carbon dioxide narcosis much less so. Electrocution has already been proved an efficient substitute for the explosive harpoon, and is far more humane Current is generated on the catching vessel and is passed into the whale through

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a cable leading along, or within, the foregoer (forerunner) harpoon rope to the harpoon itself. The circuit is completed through the whale and the sea water to the catcher.

Several hundred whales have been killed by electrocution by Norwegian, German and British enterprises, but the system is as yet by no means widely supported. The technical problems of current strength and duration, type of cable and so on seem to be near final solution. Advantages claimed for the system, in addition to the humanitarian, are smaller losses of whales by sinking before inflation can be performed; great saving of hunting time; improved keeping qualities of the meat, and considerable saving of cordage. So far, standard harpoon gear has been modified for electrical use, but once the system is perfected it is clear that much less cumbrous gear would be adequate, and then would come an immediate increase in accuracy of fire and probably in killing range.

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