



THE LIFE AND DEATH OF
WHALES

Robert Burton

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Robert Burton



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ACKNOWLEDGEMENTS

Many writers have set down their experiences of whales or whaling, or have gathered together obscure or scattered observations. This book draws together a sample of the immense stock of information that exists. Like similar books it cannot cover the whole and it relies heavily on published works by authors who have already shed light on the habits of whales and their pursuit by man. I am indebted to these authors, and also to Nigel Bonner who gave me the benefit of his knowledge.

God seems to have made the whale as a proof of his power. It is in every respect the finest animal in nature. Whatever care we take to imagine a large animal beforehand, yet the first sight of this huge creature never fails to strike us with astonishment and awe. Having been used to smaller animals, we have no conception of its enormous magnitude: for a moving column of flesh 120 feet long and 75 feet in circumference is an object so utterly different from those we are constantly presented with, that, to be comprehended, it must actually be seen: but the skeleton of the whale is by far a finer subject of curiosity than the whale itself; the whale, at first view, presents the spectator with an enormous mass of flesh, and scarcely seems animated, until pursued by the swordfish, or struck by the harpooner. When, however, the mass of flesh is removed, and the skeleton stands confessed and exposed, as it now does in Gloucester Green, it is then that we acknowledge that 'those who go down to the sea in ships see the wonders of the deep', and that there is no mechanical structure to be compared with the skeleton of the whale.

When the illustrious Galen examined a similar skeleton, he suddenly became converted from the errors of Atheism. Who can contemplate this mighty skeleton, without adoring the Mind that formed it? Where can we better cultivate a sentiment of devotion than in the presence of work so expressive of the various attributes of the varied God?

From a nineteenth-century handbill advertising the exhibition of a whale skeleton

Whales Defined and Described

WHALES have become popular animals in the last ten or so years. Public interest was first aroused when their plight at the hands of the whalers became widely known through the agitation of conservationists. Public debate and demonstration drew attention to the fact, little appreciated, that for years whales had been turned into pet food, so the family cat and dog had been fed on the flesh of animals of equal intelligence and sensibility. These warm-blooded, graceful animals, awe-inspiring in their sheer bulk, have provided more than pet food. Products from their body tissues used to pervade our lives. They found their way into soaps and cosmetics, lubricating oils, paints and varnishes, inks and detergents, leather and food. Public pressure and the dwindling numbers of whales left to supply an expanding market has led to a gradual but as yet incomplete replacement of whale products with materials from other sources.

The exploitation of whales as a resource might not have been too worrying but for two reasons. Most of us accept the exploitation of cattle, sheep and pigs, but farm animals are killed humanely and are managed rationally. Whaling fails on these two counts. Chasing and harpooning whales is not an abattoir operation and the whaling industry has not been under particularly rational management. Its history is a succession of ruthless commercial plunderings. Species after species, population after population, have been hunted out, and even eleventh-hour attempts at international control of the industry have largely failed to stem the destruction of animals which can be seen either as one of the wonders of the natural world or a major renewable source of raw material.

The growth of public concern over whales has been assisted by their becoming more familiar. They appear as images on television screens in natural history programmes, and live as

entertainers in dolphinaria. Wild whales even become seaside tourist attractions.

Public appreciation of whales has been matched by a surge of scientific investigation into their lives and habits. Traditionally zoologists have studied whales by dissection of their carcasses and, while improved techniques are being brought into the study of anatomy and physiology, there are exciting new studies of living, wild whales. Whales live underwater in the vastness of the oceans, breaking the surface for hasty gulps of air, and their lives are very private. There used to be no good way of eavesdropping on whales, but the smaller species are now being watched in the confines of dolphinaria and large whales are followed in the open sea by light aircraft, small boats and even SCUBA divers. Many fascinating glimpses of whale life have been revealed but, at the moment, they are usually so brief that they are not easy to interpret and we are still a very long way from a complete understanding of whales. Only in recent years have we learnt the true shape of live whales. They were always depicted as having baggy throats, instead of being streamlined, because the throat sags after death.

The whales belong to the mammalian order of Cetacea, a group of animals which includes the large whales, such as the blue, fin and sperm whales, the smaller whales, such as the killer and pilot whales, and the various porpoises and dolphins. All live in water and all have roughly the same shape: a streamlined, fish-shaped body with flippers and flukes for propulsion. Many of them have been hunted, mainly for their blubber, which is rendered down to oil, and for their meat. Hunting of the larger whales developed into an important industry yet, because of their inaccessibility, less is known about their lives than those of their small relatives, the porpoises and dolphins. Porpoises and dolphins are going to be largely ignored in this book in favour of the larger whales which have been the mainstay of the whaling industry. The first part of the book attempts to set forth the lives of whales, while the second records the history and present state of their deaths at the hands of the whalers.

Whales are familiar animals; they are as much a part of our general knowledge as lions and tigers and elephants and

hippopotamuses. Yet a true definition of whales has proved a problem to zoologists and laymen alike for centuries and it is still not properly resolved. When men started to name and classify animals they grouped them on the basis of external appearance and so made many mistakes about the true relationships. The whales were classed as fishes because they lived in the sea and had fins but no fur. Such a classification had a very practical use as it meant that whale flesh could be eaten during Lent. The development of a 'natural' system of classification came slowly. John Ray and Francis Willughby, the seventeenth-century founders of scientific natural history, divided the fishes into two sorts. The true fishes had gills, but the cetaceous fishes, which had a similar body plan, naked skin and marine life, possessed lungs instead of gills. The basis of the natural system as it stands today was worked out by the Swedish naturalist Linnaeus in the eighteenth century. Linnaeus classed whales as mammals, a term that was first coined by him in 1773 to cover the four-footed, furry animals, then known loosely as beasts, and their less obvious relatives such as bats and whales. The name only came into popular use about fifty years later.

If one agrees with the definition of a fish as an animal with a streamlined body, living in the water and swimming by means of fins, a whale is undoubtedly a fish. Herman Melville, the author of *Moby Dick*, pronounced that 'a whale is a spouting fish with a horizontal tail'. It is not a scientific definition, but it is only in recent years that people outside the small band of specialists have been expected to think about animals in scientific terms. As far as whalers were concerned, their quarry were 'fish' and they talked of 'fishing grounds' and 'fisheries' (when looking for books on whaling it is even advisable to search those shelves devoted to works on angling). This is fair enough for those employed in killing whales, where 'fish' is a technical term used by the profession, but it is a bad starting point for discussion of the biology of whales, where an understanding of the whale's place in the animal kingdom is essential.

Linnaeus classed the whales as mammals because they have features common to other mammals. They are warm-blooded, they have a double heart with two auricles and two ventricles,

they breathe air with lungs, they bear their young alive and suckle them, and they even have traces of hair. To think of them as fishes, cold-blooded, breathing with gills and covered with scales, now seems ridiculous, as Aristotle realized in the fourth century BC. His wisdom was ignored for centuries.

Our understanding of the relationships of animals and their proper position in the evolutionary scale has come from the study of anatomy, or body structure, in which we can see that closely related animals have similar bodies, particularly in the form of the skeleton. Study of the skeleton is particularly important because the skeletons of extinct animals have survived as fossils and it is often possible to find fossils of animals that are common ancestors to animals alive today.

The search for an ancestor of the whales and a clue to their relationship to other mammals has proved difficult. They are so well adapted for life in the sea, with the all-important skeleton being modified for swimming rather than walking, that it is barely possible even to point to a distant land-living relative. All the fossils of whales that have been unearthed to date are of animals that are distinctly whales and show few traces of features that would link them with a land-living ancestor. The oldest fossil whales come from a group which flourished in the Eocene period about sixty million years ago. They were strange eel-like animals which grew up to twenty metres long. From their skulls and teeth it would appear that the ancestors of the whales were the creodonts, a primitive, long-extinct group of mammals which also gave rise to the cloven-hoofed mammals, such as cattle, sheep and deer, and the carnivores.

When a whale is examined in detail the changes that have taken place to transform it from a land animal to a marine animal become clear. Its shape, its skeleton, its means of propulsion, the workings of the respiratory system and the sense organs have undergone profound changes. At first sight they may appear to be quite unrelated to the equivalent parts of a land mammal but they are based on the same plan. There has been a programme of modification rather than of replacement in the evolution of the whales, except in the organs of propulsion where the limbs of a land mammal have been replaced by the fluked tail. These changes are described in a

later chapter, but the basic form of a whale must be understood and the different kinds of whales described before making any detailed examination of their lives and habits.

The striking feature of whales, when compared with any other group of mammals, is their extreme size. Life in the sea, with the body supported on all sides by a cushion of water, releases them from the restraints that gravity imposes on land animals. No set of limbs of a conventional form could support the body of a whale-sized land animal. The actual size of a large whale is not easy to comprehend. A few blue whales, the largest species, have been found to measure over 30 metres long and weigh over 150 tonnes. These animals can be equated with a herd of elephants or 1,500 men, but such comparisons do not readily convey an impression of the bulk of such a creature. A better way of appreciating their size is to walk round a life size model of a whale, like the blue whales displayed at the Natural History Museum in South Kensington and the American Museum of Natural History. It is no wonder that the writer of the handbill quoted at the head of this chapter should expound so eloquently on the size of his exhibit and consider that it was a practical lesson in divinity.

An even more evocative account of the size of these animals comes from the dissection of a stranded whale described by Francis Buckland:

He [the dissector] carefully descended into the gigantic mass of anatomical horrors, and took out what parts he wanted. This service was not, however, done without danger, for when dissecting the enormous heart his foot slipped, and he fell into one of the cavities of the heart, his feet passing down into the great artery, the aorta. Assistance was luckily at hand, or he might have met with a fatal accident. To show the narrow escape he had, he subsequently cut rings out of this aorta, and found that he could pass them, without stretching, over his head and shoulders right down to his feet.

A large part of the whale's bulk is composed of a thick layer of blubber which keeps the body warm, acts as a food reserve and gives the whale its streamlined appearance. The head is large and almost free of blubber which becomes very thick just