

TURTLES & TORTOISES

OF THE WORLD



DAVID ALDERTON

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David Alderton

Photographs by
Tony Tilford



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For Zuza
with special thanks

Preface

People react differently to different creatures, especially in the case of reptiles. While snakes often provoke a strong sense of dislike from the casual observer, tortoises and turtles attract a much more positive response. This is obvious from walking around any large store. Here, a variety of household objects and toys portraying tortoises will almost certainly be seen. It is perhaps surprising, therefore, that so few books have been written about this group of reptiles, especially as some species have been so widely kept as pets for many years.

The history of human interaction with chelonians is, sadly, littered with numerous instances of careless, greedy exploitation, as exemplified by the giant tortoises, whole populations of which were destroyed by sailors visiting the Galapagos and Aldabran Islands during past centuries. Fresh-water species have also suffered, as shown by the case of diamondback terrapin, which was brought to the verge of extinction in order to satisfy the appetites of American gourmets.

Today, however, the greatest concern is focused on the seven marine species of turtle, of which five are presently threatened with extinction. The lifestyle of these chelonians renders them uniquely susceptible to human interference. I shall always remember my first sight of a sea turtle swimming in the wild, over the Barrier Reef, off the coast of Queensland, Australia. The agility and elegance of this creature underwater is in total contrast to the slow, cumbersome individual which drags herself onto land to lay her eggs. Here, in what is virtually another world, they are almost totally defenceless, and particularly vulnerable to the effects of human predation.

But it is simply not enough to try to conserve turtles by attempting to prevent their capture. The hunting of turtles has been ingrained in many cultures for centuries. If turtles are to be conserved for future generations, it is their economic value that offers their salvation. The transfer of eggs for artificial incubation has been used in the past, with hatchlings then being released into the sea, but this is now accepted as a highly inefficient method of attempting to increase the numbers of reproductively active turtles in the wild. Out of the thousands released, only a minute percentage will survive the hazardous years to maturity, returning to breed, perhaps decades later.

Commercial ranching now appears to offer potentially the most effective means of increasing the numbers of these reptiles which have graced the world's oceans for nearly 200 million years. A considerable amount of knowledge has been gained about the captive-rearing of turtles under

these conditions. Now it is possible to rear hatchlings to maturity in a comparatively short space of time. The successful release of these turtles back to the oceans would offer a more rapid and effective means of repopulation than releasing vast numbers of hatchlings. The demand for turtle products, essentially one of the major factors in the decline of these reptiles, could also be met from captive-reared animals, rather than by the continual capture of wild individuals. Whether westernised sensibilities will allow this to happen remains to be seen.

It is significant that while such ranching schemes for crocodilians are widely accepted, the concept of rearing any turtles for slaughter remains highly controversial, even if this system of management represents the logical step forward in ensuring the conservation of the species itself. The turtle issue reveals the misplaced emotional fervour which presently threatens to undermine the overall credibility of the conservation movement. It would, indeed, be a tragic irony if a combination of misplaced human sympathy and continued hunting were to prove the two major forces which led to the extinction of any species of turtle.

David Alderton
Brighton, East Sussex, 1988

Chapter 1

Chelonians and Humans

The description 'chelonian' is derived from the classificatory name 'Chelonia.' While the group of reptiles variously known as tortoises, turtles and terrapins are instantly recognisable because of their distinctive shells, the actual terms used to describe these creatures which form the order Chelonia are far from clear. In Britain, the description of 'tortoise' tends to be applied to those species which are primarily terrestrial in their habits. Turtles, in contrast, are predominantly aquatic, and certain members of this group are also called terrapins. It appears that this description, which originated with the native Indians of North America, was then adopted by the early European settlers. They applied it to chelonians which were caught for food, especially species found in brackish waters, such as the diamondback terrapin (*Malaclemys terrapin*).

Plate 1 The diamondback terrapin (*Malaclemys terrapin*) was brought to the verge of extinction in the early years of this century because of its popularity as a gourmet's dish, costing as much as \$120 per dozen. They have since recovered in numbers to a large extent.

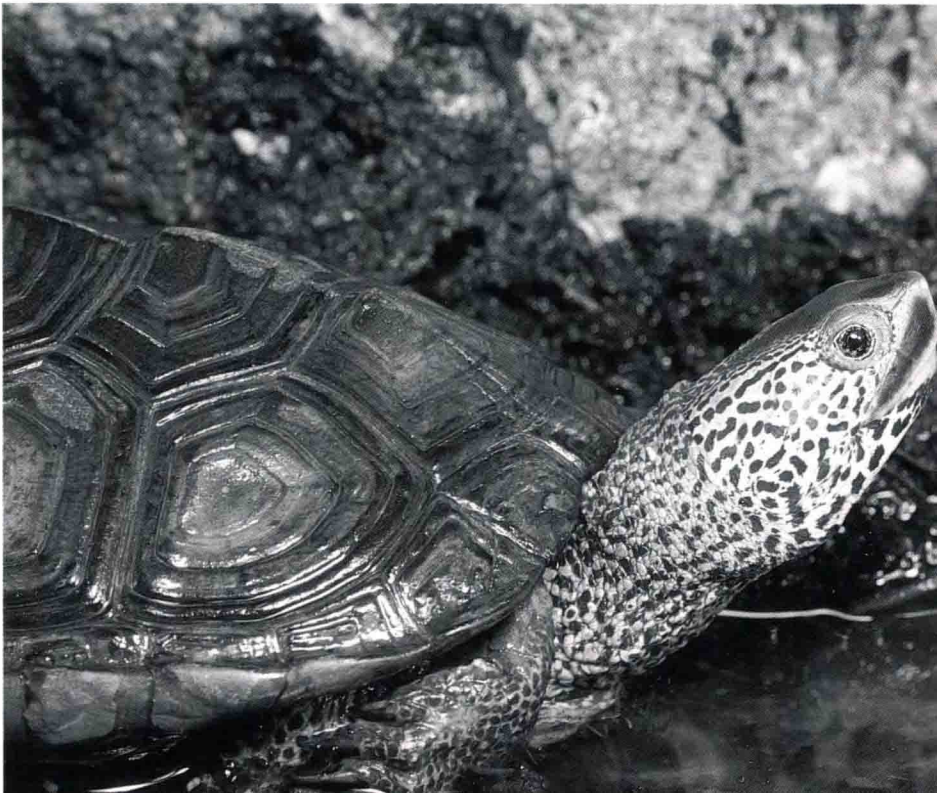




Plate 2 Confusion surrounds the common terms used to describe chelonians. In Britain, terrestrial and semi-terrestrial forms are usually known as tortoises, whereas in North America and Australia, all species tend to be termed turtles. This problem over nomenclature is crystallised in the case of the North American box turtles (*Terrapene* spp) which are more commonly encountered on land, and thus often known in Britain as tortoises.

Throughout North America and most of the remainder of the English-speaking world, however, it is the term 'turtle' which is often used as an all-embracing description of these unique reptiles. This word is undoubtedly a more recent addition to the language, as it is clear that up to the sixteenth century, the description 'tortoise' was also applied to aquatic species.

British sailors venturing into the Caribbean waters, following Spanish and Portuguese explorers, soon adopted their descriptions for the marine chelonian species which they encountered. It seems more than likely that the Spanish word *tortuga* was the origin of the term 'turtle'. Writing about his expedition to South America in 1595, Sir Walter Raleigh refers to the *tortuges* and how both these creatures and their eggs were eaten by the crew. At that stage, marine turtles were far more numerous than they are today, and it has been suggested that their population could have exceeded 50 million turtles, compared with the estimated number of 10,000 in the area today.

Turtles and art

Chelonians have tended to hold a special place in human affections, in spite of being heavily persecuted down the ages. Most ancient cultures

feature representations of turtles and tortoises in their art, in some cases also utilising tortoiseshell for various purposes. This material is actually obtained from the hawksbill turtle (*Eretmochelys imbricata*), being the scutes, or outer layer of the shell. Only the top part of the shell shows the richness of markings for which tortoiseshell has always been prized. In the living animal, however, the shell appears drab in comparison, often being discoloured by the attachment of marine creatures such as barnacles.

Hawksbill turtles, presumably captured in the Red Sea, were highly valued by the ancient Egyptians. Their shell was particularly popular for the manufacture of bracelets and knife handles. The appearance of these turtles is not portrayed in Egyptian art, however, although the African soft-shell (*Trionyx triunguis*) is featured on tombs. Gradually, it appears that these turtles acquired a malevolent image. This seems to have persisted, at least in part, through the days of the Greek empire, when the word describing tortoises meant 'dweller in Hell'. Early Christians



Plate 3 Illegal trade in turtle products still takes place, in spite of international attempts to control it. This is part of the haul confiscated by customs officers from travellers passing through Rotterdam.

frequently portrayed chelonians in battle with cockerels, symbolising a battle between the force of evil and the need for vigilance. It appears that the slow gait of the tortoise contributed to its unpopularity at this time. St Jerome refers to the tortoise, with its ponderous movements, as being burdened under the weight of sin.

In China, the tortoise was also significant in religious circles. The markings on the top of its shell were believed to reveal the future for those who could read the signs. The image of the tortoise was incorporated into a solid form as a pedestal during the Sung dynasty, probably as early as AD 990, because of its wisdom.

Practical representations of chelonians actually date back several millennia in China. Here, the Emperor Hwang-ti had the emblem of a snake entwined with a tortoise, some 2,500 years BC. These creatures were said to protect one against evil forces, and to keep danger away, so that flags showing this emblem were carried both in front of and behind the emperor's entourage. It was believed, at this stage, that all chelonians were exclusively female, and that the snake was necessary for breeding purposes. The image of the tortoise and serpent, although it has largely disappeared from Chinese culture today, is also featured in Indian legends.



Plate 4 A variety of tortoise artifacts. Tortoises have been represented in the art of most cultures which have come into contact with them. The distinctive appearance and long lifespan of these reptiles have also formed the basis of numerous folklore stories in many parts of the world.

The term 'tortoise' also became an insult of the worst kind when used to describe another person. This seems to have arisen because the *lo hu*, who were considered outcasts from society during the Tang dynasty, were forced to wrap their heads in green cloth, which then resembled the appearance of a tortoise.

Longevity

In neighbouring Japan, chelonians were regarded as symbols of happiness and good fortune, because of their potentially long lifespan. Representations of tortoises were common gifts, particularly at weddings, to wish a long and happy life to the couple. Chinese attitudes towards tortoises were also apparent in Japan. These chelonians were viewed as being responsible for protecting all other creatures with shells. Various references in eastern mythology describe how the earth was supported by tortoises. In China, Joka, the sister of Fukki, a mythological Chinese figure, was said to have taken the tortoise's legs for this purpose, when a giant destroyed one of the pillars of Heaven, which kept the world in place. Indian legend viewed the tortoise as supporting an elephant, which in turn supported the world on its back. The Japanese portrayed a tortoise as carrying the sacred mountain of Horai on its back. Since Horai was inhabited by immortals, this appears to be a clear reference to the chelonian's potentially long lifespan.

This characteristic feature of chelonians has fascinated human imagination right down to the present day. While precise figures are rather difficult to establish, it seems clear that the lifespan of these reptiles typically exceeds that of other vertebrates. The record for longevity is said to belong to a radiated tortoise (*Geochelone radiata*) which was a gift from Captain Cook to the King of Tonga. After an eventful life, during which it was in collision with a cart and exposed to a couple of forest fires, this tortoise was said to have been over 189 years old when it finally died in 1966. As there is no record of this gift in Captain Cook's writings, however, it is impossible to authenticate this story.

Better documented is the case of Marion's tortoises. The French explorer, Marion de Fresne, visited the Seychelles in 1776, and obtained five native tortoises during this period. These were of the now extinct giant species known as *Geochelone sumeirei*. They were transferred to the nearby island of Mauritius, and remained there when the British took this territory from the French in 1810. The tortoises became a popular feature, living at the Royal Artillery barracks. The last survivor finally died in 1918, when it became trapped in a gun emplacement. This meant that it must have been at least 152 years old, and was probably nearer 200, assuming it was an adult on its arrival in Mauritius.

Size is no indication of the potential lifespan of chelonians, as small species can also live for a long time. The box turtles of the genus *Terrapene* appear to have a long natural lifespan. It seems that it used to be a popular pastime to carve initials and a date on the shells of these turtles in various parts of North America, notably in the north-east of