



The turtle in labor. Mucus streams from the eyes past the powerful beak, capable of crushing bone



The struggle is nearly over—the turtle carefully covers her eggs before returning to the sea



George,
This surfaced again recently. Written before I became a biologist. For your historical/historical collection
Cool
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THE LONELY STRUGGLE

Text and Photographs by COL. LIMPUS

Each year the female turtle leaves her natural environment to make a difficult and exhausting journey. All along Australia's northern beaches thousands of turtles move from the sea and up the beach to deposit their eggs, a lonely struggle which is often completely wasted as the hatched youngsters fall victim to their numerous eager predators.

Every summer thousands of turtles slowly drag themselves up the beaches of the north Australian coast and adjacent islands. They are green turtles, perhaps measuring some four feet across, and of the species *Chelonia mydas*. And they are all females. For the purpose of this unaccompanied journey is to lay eggs along the high tide mark; but the male, slightly smaller and distinguished by a longer tail, never leaves his aquatic environment.

On the sandy beach the turtle is as cumbersome as she is graceful in the water. She weighs up to 3 cwt. and this weight cannot be supported by her flippers—she has to drag herself over the sand. This laborious journey to the desired nesting spot calls for a tremendous effort and also for several stops along the way. It is only on reaching the level of grass and associated vegetation behind the beach, that the business of nest building begins.

KEITH GILLET

Heron Island. Two clearly defined sets of tracks are the only signs of the green turtle's nocturnal visit



KEITH GILLET

*The green turtle in its natural habitat
—swimming in the crystal clear water
of a coral reef*

HUNDREDS OF EGGS

The first step is to excavate a small crater. This is done by energetically flinging the sand away with the front flippers. It appears as if the turtle is bogged in the sand and is helplessly trying to get out. After much hard work and frequent periods of rest a depression about four feet long, two feet wide and twelve to eighteen inches deep is dug. Now the hind flippers come into action for the second step. A shaft about nine inches in diameter and to the depth of the hind flipper is dug straight under the tail. To dig this shaft the extended tip of the flipper digs into the sand, the end curls like fingers and the flipper holding the sand is withdrawn. The flippers are used alternately until no more sand can be reached.

Placing the hind flippers on either side of the shaft, the turtle then settles down on to them and the egg-laying begins. At first the eggs come slowly—one or two a minute—but soon the rate increases to about a dozen a minute. Prior to actually laying a group of eggs, the turtle moves her body slightly downwards; with each movement the well lubricated eggs drop into the shaft. The eggs (very similar in

shape and size to ping-pong balls) have a white leathery shell which allows them to bounce. The usual number of eggs laid is 150 although the larger turtles lay as many as 200.

If you should ever witness this remarkable event, you must take care to keep noise and lights to a minimum as any disturbance before the eggs are laid can cause her to head back to the sea without laying, so that her struggle up the beach has to be repeated all over again at a later date. But once the eggs are being laid she can be examined closely. By digging carefully, the shaft into which the eggs are laid can be exposed and the eggs can be seen as they drop into the sand. But always remember to keep clear of the turtle's beak as it is quite capable of biting through bone!

When the eggs are laid the depression has to be filled in. Firstly the turtle pushes sand over the eggs with her hind flippers, all the while slowly rocking her body until the sand is tightly packed down. Then she vigorously throws sand backwards with her front flippers. The last part of the operation is accompanied by slow forward movements and in the end the turtle may be four or more feet from the eggs.

THE NEW GENERATION

The turtle is considerably lighter on her return to the ocean and this trip is accomplished much more quickly. As evidence of her visit she leaves behind two very distinct sets of tracks. In the shallows she pauses for a deep breath, puts her head down and, once again a picture of grace, glides to deep water propelling herself by strong strokes of her flippers. No longer the helpless, defenceless creature she was on land, she will remain in the ocean until the next time she is ready to lay.

The young turtles hatch after nine to ten weeks and begin life by digging out of the sandy nest. Not all of the original 150 eggs hatch, and not all the young turtles that do hatch reach the surface. The weaker suffocate in the sand. But even of those that reach the surface many perish. They still have numerous enemies. As the four-inch youngsters with disproportionately long flippers race over the sand towards the sea, some fall prey to sea birds by day, and others to the silent ghost crabs by night. But some do reach the sea, and again continue the battle for survival. Should they venture, from the protection of rocks and coral while seeking small fish to eat, they themselves may be eaten by sharks, cod and other large fish. Only two or three out of each nest ever reach maturity.

KEITH GILLET

Her task completed, the turtle heads for her aquatic home



This remarkable photograph shows the eggs in the process of being laid into the shaft so painstakingly dug by the turtle

All to naught. A silver gull pounces eagerly on the emerging infant turtles

