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SEA TURTLES OF SHELL BEACH, BRITISH GUIANA.—There appear to be no published data on marine turtles in British Guiana, even though it is well known within the country that turtles nest at a number of points along the northwest coast, including Waini Beach, Shell Beach, Turtle Beach, and Dauntless Point, Leguan Island. The Guianese do not differentiate between the different species, calling all simply "sea turtles," or if pressed for a specific name, "green turtles." However, the writer's stay on Shell Beach, 13–17 August 1964, revealed that no less than four species nest on that beach alone, and that the green turtle is outnumbered by both the Pacific ridley and the hawksbill.

Shell Beach is situated in the Northwest District of British Guiana, approximately 45 miles from the Venezuelan border. It is about six and one-half miles long and one-half mile wide, and is composed entirely of broken seashells, bound together in the higher places by ground creepers. It is separated from the densely forested mainland by a mud-bottomed lagoon which may be crossed by chest-deep wading at low tide. A sea approach to the beach is hazardous, as the water is too shallow for large boats and usually too rough for small ones to make a landing. An approach from inland consists of a 35-mile journey down the Waini River followed by a six-mile trek through the forest (which in the rainy season is flooded to a depth of about one ft) to the coast. The lack of easy access to the beach makes it a relatively safe turtle nesting ground, though Amerindians do camp on the beach from time to time, killing and eating the adult turtles and digging up the nests. In addition, considerable numbers of black vultures (*Coragyps foetens*) on the beach probably constitute a hazard for the newly hatched young. According to local information, sporadic nesting by one species or another occurs throughout the year, with August representing the time of maximum nesting activity.

Shells, bones, and skulls found were referable to the following species: Pacific ridley (*Lepidochelys olivacea*), hawksbill (*Eretmochelys imbricata*), green turtle (*Chelonia mydas*), and leatherback (*Dermochelys coriacea*).

The occurrence of *Lepidochelys olivacea* in the western Atlantic Ocean was summarized by Carr (1963), who showed records as follows: Gibara, on the northern coast of Cuba (Aguayo, 1953, identification corrected by Carr, 1957); Surinam (Brongersma, 1961); the open sea 50 miles off British Guiana (log of U. S. Fish and Wildlife Research Vessel, OREGON); and the north coast of Trinidad where the so-called batali was assumed (Carr, 1956) to be *L. olivacea* and subsequently found to be, in fact, that species, and to be seasonally common about the eastern shores of that island. It is usually assumed that *olivacea* records from this side of the Atlantic refer to current-borne waifs from West Africa, from which it is known as a breeding animal from many localities (Carr, 1957), though Brongersma (1961) suggested that a careful search of beaches in the Guianas might reveal nesting by the Pacific ridley, as his specimen from Surinam was a hatchling, still with the egg tooth. My studies in British Guiana reveal that the Pacific ridley is abundant there, possibly the most abundant sea turtle. I obtained the strongest evidence, short of actually witnessing a nesting emergence, that the ridley breeds in some numbers on Shell Beach. Fourteen ridley shells were found in a sufficiently complete state for measurements and lateral counts to be taken (Table 1). The measurements are straight line, made by placing a rigid rule inside the carapace in contact with the extreme front and rear parts of the shell.

Six of the 14 specimens were asymmetrical; five of these six had the greater number of laminae on the left. However, Deraniyagala (1939), working with a much larger sample of *L. olivacea* from Ceylon, found that lamina reduction occurred with almost equal frequency on both sides. One ridley plastron was found with a well-defined pair of contiguous mesoplastra.

Measurements and lateral lamina counts were made on four ridley hatchlings from Waini Beach, collected in September 1960 and now in the Georgetown Museum (Table 1). These data agree closely with those of Pacific *Lepidochelys olivacea* hatchlings furnished by Deraniyagala (1939) and Carr (1952).

No live ridleys were seen on the beach, but three fresh nests were excavated (identified on the basis of the small track width and egg diameters), containing respectively 186, 159, and 156 eggs. All the eggs approximated closely to spheres of 39.5 mm diameter, with the exception of five eggs in the last nest, two of which were abnormally elongated (46.5 × 36 and 48 × 35.5) and three undersized and yolkless (30 × 30, 20 × 15.5, and 21.5 × 19). The Amerindians said that these abnormal eggs indicate that the clutch is the turtle's last of the season, a theory which may well be true. The three nests were found within 15 yards of the sea, and appeared to have been made surprisingly quickly; on two occasions, completed nests were found in places which had been passed only two hr before, when there had been no sign of nesting activity.

A green turtle was seen to nest on the beach during the night of 14 to 15 August; this was an unusually large specimen, 118 cm (46.5 inches) in straight carapace length, one-fourth inch longer than the largest of 1,146 Caribbean green turtles measured by Carr (1960), though lengths of up to 55 inches are recorded in the population that nests on Ascension Island (Carr, 1962). This turtle emerged from the sea at about 10:45 PM and moved up the beach, taking four to six thrusts forward in each burst of activity before relaxing. It left a track about four ft wide, and followed a tortuous path, eventually excavating a trial nest 75 yards from the sea. The actual nest was made about 25 yards further on. Having excavated the pit and nest cavity, the turtle deposited 125 eggs, all approximately 46 mm in diameter, over a period of rather more than two hr. The turtle then commenced its journey back to the sea at about 6:30 AM.

Eight green turtle shells were found on the beach; all were very large, but most were broken. Two complete enough to be measured were exactly the same length, 107.5 cm. Several skulls were collected, many with fractures, suggesting that the turtles had been killed by blows on the head.

No live hawksbills were seen on the beach, but shells and skulls were plentiful. The horny laminae had not been stripped from the shells, indicating that the animals had been killed solely for food. All the shells were unusually large for this species; two unbroken ones measured 85.4 and 89.5 cm in length:

TABLE 1. DIMENSIONS (CM) AND LATERAL LAMINA COUNTS OF *Lepidochelys olivacea* CARAPACES FROM BRITISH GUIANA.

Length	Width	Left Laterals	Right Laterals
	Adults from Shell Beach		
64.0	61.9	6	6
64.3	61.7	7	6
66.3	61.1	7	7
66.6	62.2	7	7
66.8	61.4	7	7
67.6	59.6	7	7
67.8	59.7	7	6
68.7	66.0	9	8
69.1	66.0	7	7
69.4	64.5	7	6
70.0	60.0	7	6
70.6	65.3	6	6
71.0	66.0	7	8
71.5	65.5	7	7
	Hatchlings from Waini Beach		
4.20	3.45	7	6
4.10	3.30	6	7
4.10	3.45	7	7
4.00	3.45	7	7

the latter is greater than the largest of Deraniyagala's (1939) Ceylonese specimens (85 cm) and Carr's (1952) Atlantic hawksbills (largest 88.5 cm). The largest skull found was 20.3 cm in length.

Two dead leatherbacks, and skull fragments of a third, were found within 15 yards of the sea. The carapaces were too decomposed for length measurements to be made, and the skulls were broken and had fallen apart at the sutures, but the latter were reconstructed and measured 25 cm and 25.6 cm in length.

LITERATURE CITED

AGUAYO, C. G. 1953. La tortuga bastarda (*Lepidochelys olivacea kempii*) en Cuba. Mem. Soc. Cubana Hist. Nat. 21(2):211–219.

BRONGERSMA, L. D. 1961. Notes on some sea turtles. Zool. Verhand. 51:1–46.

CARR, A. F. 1952. Handbook of turtles. Comstock Publ. Associates, New York, N. Y.

———. 1956. The windward road. Alfred A. Knopf, Inc., New York, N. Y.

———. 1957. Notes on the zoogeography of the Atlantic sea turtles of the genus *Lepidochelys*. Rev. Biol. Trop., Costa Rica 5(1):45–61.

———. 1960. The ecology and migrations of sea turtles, 4: The green turtle in the Caribbean Sea. Bull. Am. Mus. Nat. Hist. 121:1–48.

———. 1962. The ecology and migrations of

sea turtles, 5: Comparative features of isolated green turtle colonies. Am. Mus. Novit. 2091.

———. 1963. Panspecific reproductive convergence in *Lepidochelys kempi*. Ergebn. Biol. 26:298–303.

DERANIYAGALA, P. E. P. 1939. The tetrapod reptiles of Ceylon. Colombo, Ceylon.

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