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Observations on Captive Hawksbill Turtles

Melvin H. Goodwin

Environmental Research Projects

Carriacou, Grenada

West Indies

Figure Legends

Figure 1. Mean weekly food consumption for individual E. imbricata of varying ages

Figure 2. Mean weight gain vs. food consumption in juvenile E. imbricata

Figure 3. Mean growth rate of E. imbricata between 1 and 20 months of age

Figure 4. Mean weight and mean carapace length of E. imbricata between 0 and 20 months of age

There is a paucity of published data on the behavior and growth rate of the hawksbill sea turtle (Eretmochelys imbricata) in captivity. Such data are essential to the establishment of effective animal husbandry programs, and these programs may play a significant part in efforts to preserve this species. For these reasons, it seems desirable to make the following data (though incomplete) available at this time. Following is a summary of observations made in conjunction with a sea turtle nest protection and hatchery program being conducted by Environmental Research Projects on the island of Carriacou (Grenada, West Indies).

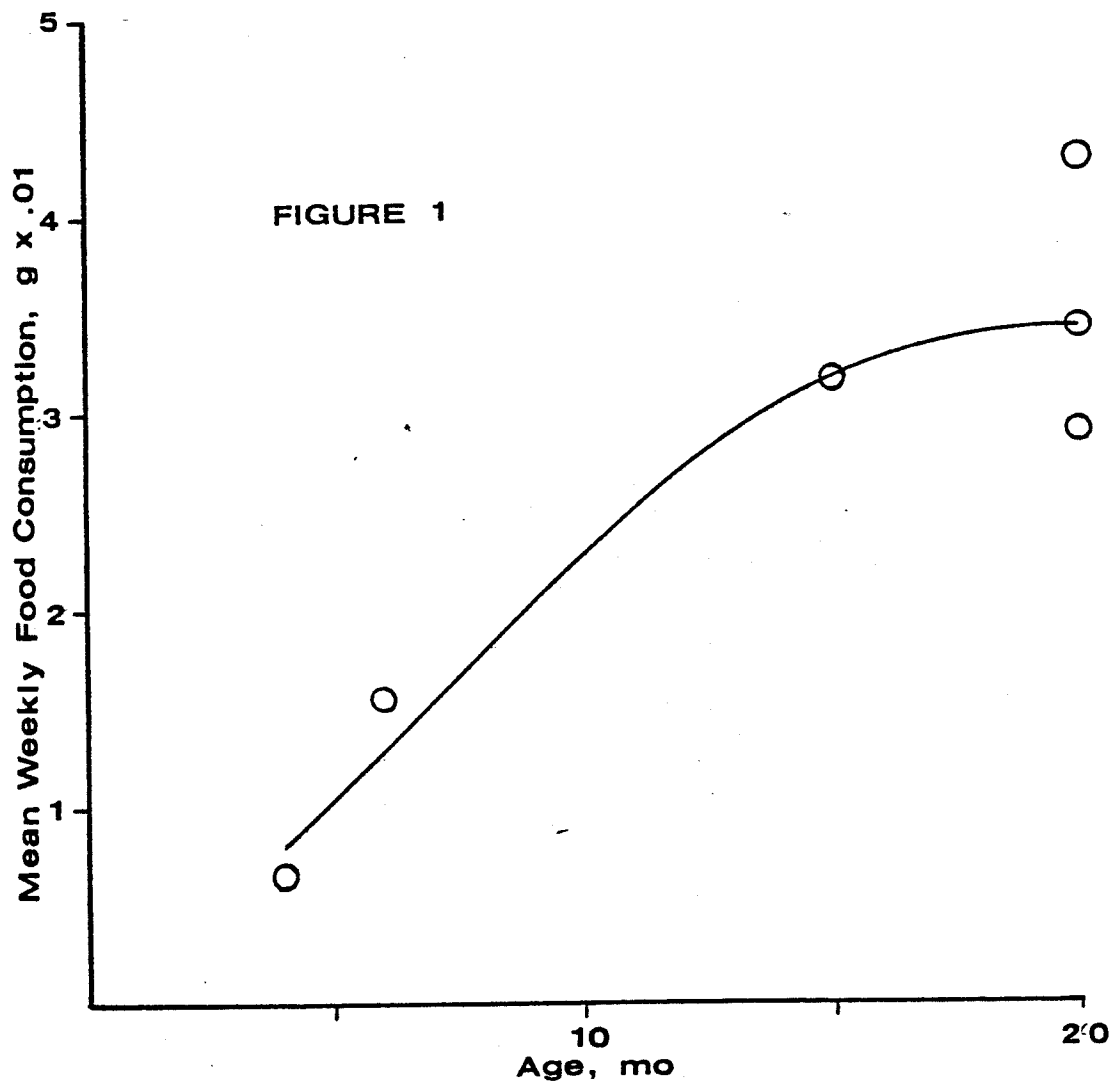
Twelve juvenile hawksbill turtles were purchased from local turtle hunters. Eight of these were approximately three weeks old and the remainder six weeks old at the time of purchase. A specific number of posterior tips were removed from the marginal scutes in order to distinguish individuals. We have found this procedure to be unsatisfactory since the notches become more difficult to distinguish as the turtles grow. We have subsequently attached a numbered metal tag through small holes bored in the last marginal scute. The first eight turtles were kept in two galvanized tanks (50 cm x 50 cm x 70 cm) for eight months, after which they were transferred to a concrete tank (180 cm x 180 cm x 65 cm). Other juveniles were placed directly into the concrete tank at the time of purchase. Seawater in the holding tanks was replaced weekly. Six turtles died during fourteen months of captivity

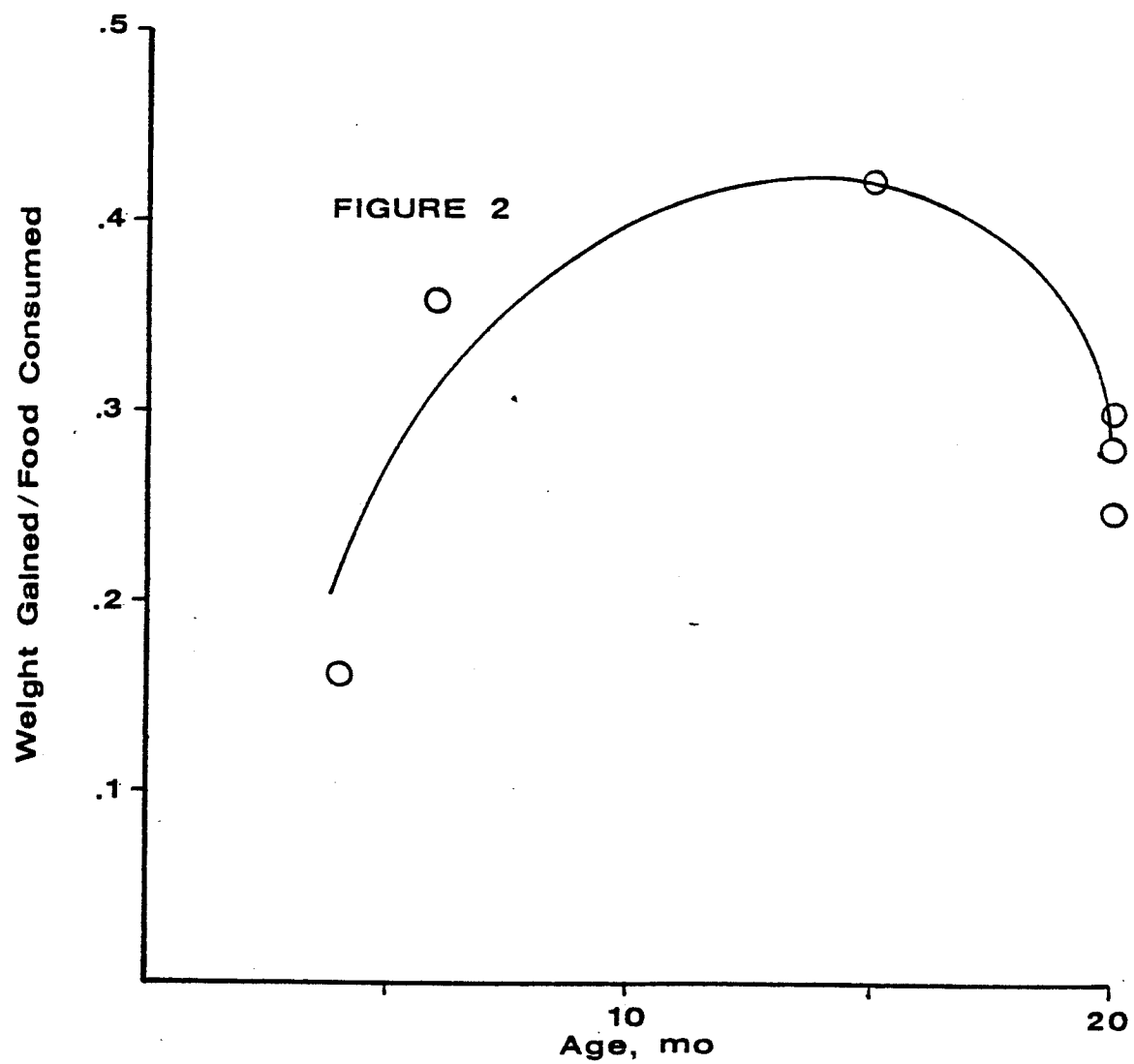
from wounds caused by other turtles, and partitions have since been placed inside the tank to prevent fighting and to provide shelter.

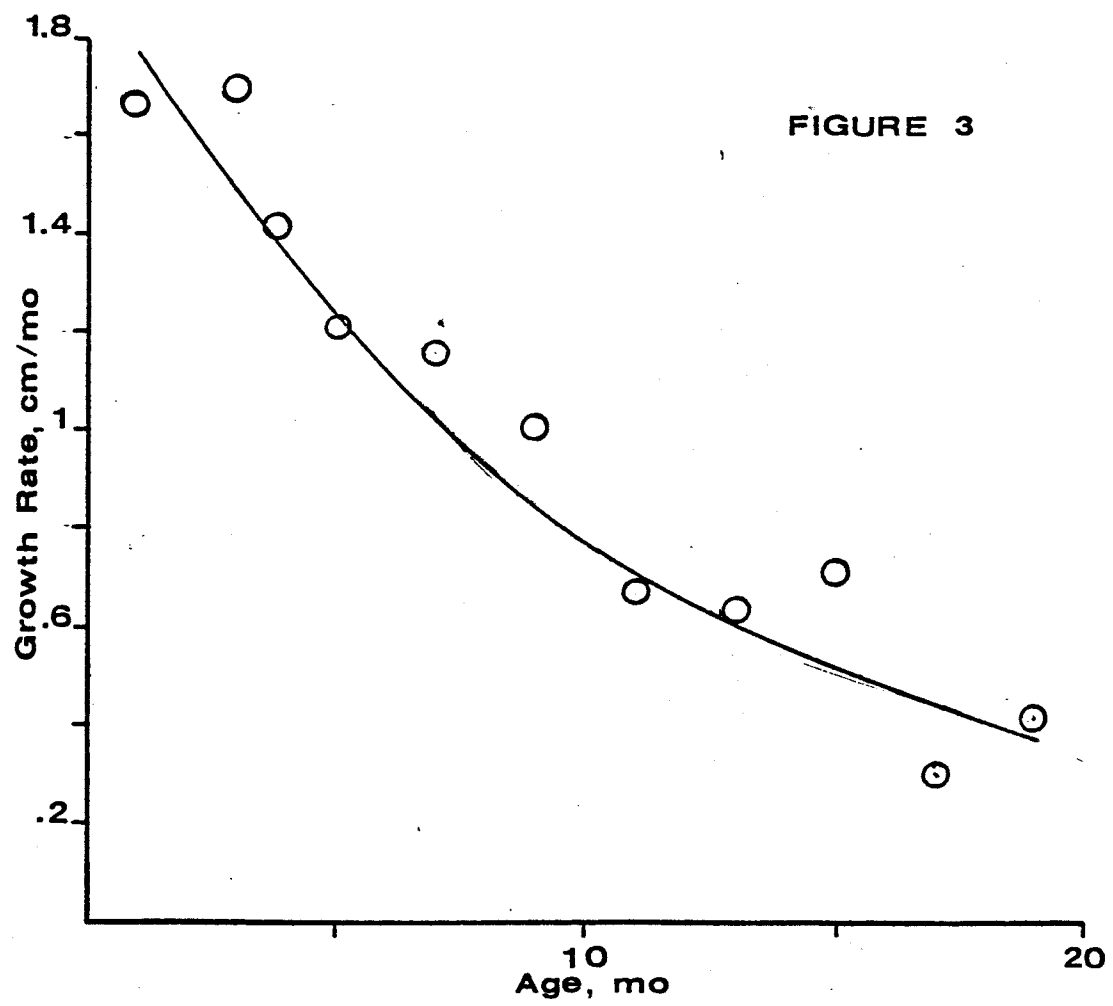
Outstanding behavioral patterns are non-existent among our turtles. The animals are generally placid throughout the day except for an occasional act of aggression when competition for a preferred resting spot occurs.

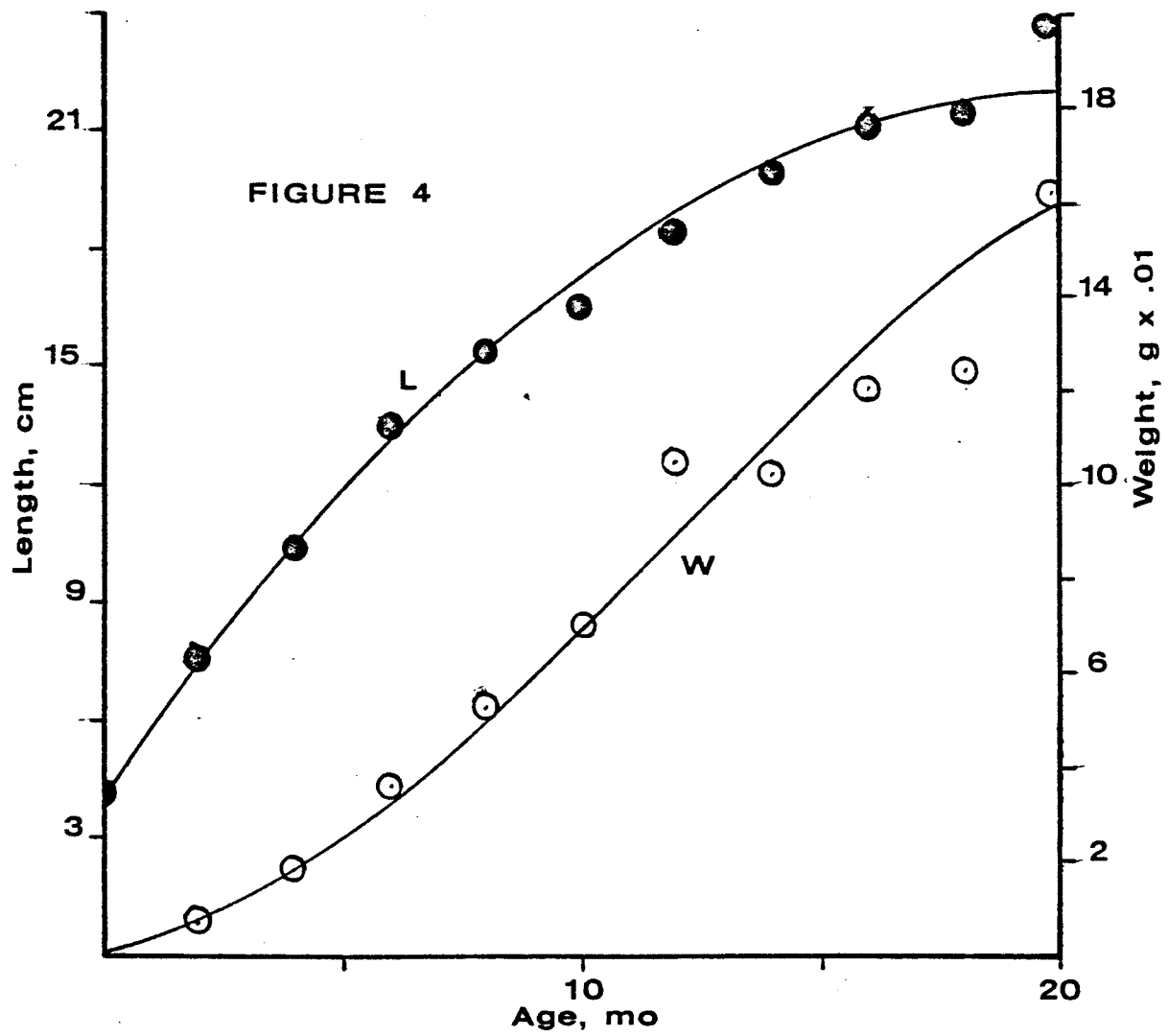
A controlled feeding program was adopted in order to study growth rates and food conversion. Each turtle was fed chopped fish to repletion once daily. The daily consumption was found to be roughly proportional to the weight of the turtle (Figure 1). Data on the ratio of weekly weight gain:food consumed are summarized in Figure 2 as a function of age. The mean weight gain:food consumption ratio appears to decrease between fifteen and nineteen months of age, but more data are needed to substantiate this impression.

The mean growth rate of seven six-month old hawksbills was 1.18 cm/mo (Figure 3). This rate is quite close to the figure of 1.14 cm/mo indicated by data reported by Schmidt (1916). Kaufman (1967) has reported the mean carapace length and mean body weight of 25 five-month old hawksbills to be 112 mm and 201.6 g respectively. Our data for seven individuals of the same age yield a mean length of 120.5 mm and a mean weight of 270 g (Figures 3 and 4). Kaufman also reports the mean carapace length and mean body weight of one-day old hatchlings to be 42.3 mm and 15.4 g respectively. Data collected on Carriacou from 15 one-day old hatchlings reveal a mean carapace length of 39.5 mm









and a mean body weight of 13.8 g.

In order to obtain more information on the normal dietary habits of sea turtles, four hawksbills were released into a natural salt water pond containing a variety of potential foodstuffs. The turtles were observed to eat a variety of sponges, bark of mangrove roots, zooanthids, Cassiopea sp., Ostreobium sp., and Halimeda sp. These observations confirm the impression that E. imbricata is generally omnivorous, although each turtle seemed to prefer a specific type of food. It is interesting in this connection to note that while in captivity these turtles consistently refused to eat sponges, live coral, or vegetable matter of any kind, although they have been observed to consume coarse coral sand and bits of calcareous rubble.

At present, there is little or no information available on the optimum conditions for growth in E. imbricata. We are extending our observations to include the effects of enclosure space, shelter, feeding intervals and various foods on growth rate in this species, and would appreciate suggestions and collaboration from other investigators involved in similar studies.

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