

COMMUNICATION III

A Note on the Feeding of Leatherback (*Dermochelys coriacea*) Hatchlings

ABSTRAK

Percubaan memelihara anak tetasan penyu belimbing di Universiti Pertanian Malaysia dahulu tidak berjaya, kerana ketidakupayaan anak-anak tetasan memakan secara sendiri makanan yang diberikan. Kertas ini menghuraikan cara kejayaan anak tetasan penyu belimbing memakan daging cincang sotong, yang telah disediakan dalam bentuk plat agar. Anak-anak tetasan makan secara sendiri, dan aktif, serta didapati mempunyai nafsu makan yang kuat. Kini kajian pemakanan dan tumbesaran bagi spesies ini bolehlah dijalankan.

ABSTRACT

Previous attempts at rearing leatherback hatchlings in Universiti Pertanian Malaysia have failed because of the inability of the hatchlings to feed voluntarily on the food offered. This communication describes the successful feeding of leatherback hatchlings on blended squid mantle incorporated into agar discs. The hatchlings fed voluntarily and actively and were seen to possess a voracious appetite. It is now possible to conduct feeding experiments and growth studies on this species.

INTRODUCTION

The rearing of leatherback hatchlings has been seen as a challenge to turtle biologists for many years and the hatchlings have proved exceedingly difficult to keep in captivity (Prof. Archie Carr, per. comm., Mrosovsky, 1983). Information on the subject is therefore scarce and poorly documented. A literature review reveals that to date, only half a dozen isolated attempts at rearing the leatherback have been reported, albeit, briefly. Reported maximum weights and longevity attained have ranged from 1.7 kg. in 137 days (Uchida, unpublished data) to 27.7 kg. in 642 days (Foster and Chapman, 1974). The food offered include fish, squid, octopus, clams, jellyfish, beef liver, chicken egg, algae and lettuce (Deraniyagala, 1939; Frair, 1970; Foster and Chapman, 1972; Witham and Futch, 1977 and Uchida, unpublished data). The most suitable food appears to be jellyfish, the natural food of leatherbacks. To date, no one has systematically nor consistently attempted to rear leatherbacks in sufficient numbers to support a viable head start

programme, as in the case of kemp's ridley turtles (Martin, 1986).

Some attempts were made in Universiti Pertanian Malaysia in 1984 and 1985 to rear leatherback hatchlings. Food was offered in the form of commercially available fish pellets, fish flakes as well as chopped squid meat. These attempts have been unsuccessful because of the failure of the hatchlings to accept the food offered (Umar Salleh, per. comm.). The hatchlings which were force-fed deteriorated progressively in health and did not survive beyond one month. In view of this, further attempts were made in 1986 to find a form of food which can be conveniently prepared and yet be readily and voluntarily accepted by the hatchlings.

MATERIALS AND METHODS

Ten hatchlings were taken from a nest in the Rantau Abang Beach Hatchery described in Siow (1982) for the feeding experiments. The hatchlings were introduced to a circular tank of clean sea water on the day of emergence and

allowed to acclimate in the tank for four days before feeding trials commenced. The tank was cleaned daily, with about a third of the water replaced each day.

Four types of food were offered, i.e. commercially available goldfish mini pellets, floating fish flakes and chopped squid mantle. The fourth type was prepared from agar and minced squid mantle. Six grams of edible agar were added to 300 ml of boiling water. When the agar had completely dissolved, 150 g of freshly minced squid mantle was added and allowed to cook. The mixture was then cooled a little and blended using a kitchen blender. The prepared food was poured into petri dishes to make discs of thickness 3 mm when set.

The four food types were offered once daily for a week to ascertain the acceptability of the food to the hatchlings.

RESULTS AND DISCUSSION

The behaviour of the hatchlings in the tank was very stereotyped. All swam incessantly against the walls of the tank as reported by Mrosovsky (1983) and Pritchard *et al.* (1983).

Food offered in the form of fish pellets, fish flakes and chopped squid mantle did not elicit any response from the hatchlings. Some hatchlings were held gently by the hand to face the food as it was introduced to the tank, but to no avail. Hence Hendrickson's claim (cited in Pritchard, 1971) that leatherbacks can be raised entirely on chopped squid is not understood.

The agar discs containing blended squid mantle was the most successful in terms of acceptability. When the discs were held on the surface of the water near the walls of the tank, the hatchlings were attracted to the food and were seen to attempt feeding. Feeding, however, was unsuccessful because of the inferior position of the mouth. Subsequently, the discs were lowered and held horizontally just about 4 to 5 cm below the surface of the water. Voluntary feeding was achieved with most of the hatchlings feeding well and voraciously on the discs (Plate 1). When the food discs were held in the middle of the tank on subsequent days, the hatchlings ceased swimming against the walls of the tank and instead headed straight towards the food. All the hatchlings fed actively and rapidly.

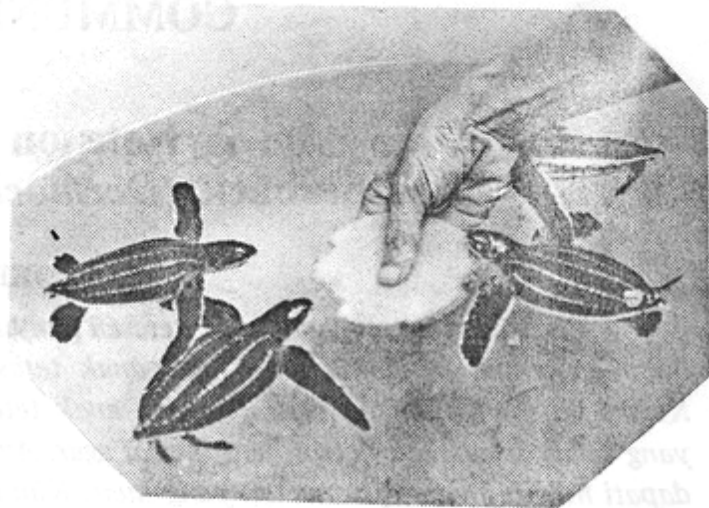


Plate 1: Leatherback hatchlings feeding voluntarily on the agar food disc.

With the success in getting the hatchlings to feed voluntarily, it is now possible to initiate feeding experiments as well as digestibility and growth studies on leatherbacks.

ACKNOWLEDGEMENTS

This study was funded by ESSO Production Malaysia Inc. The author is indebted to the Fisheries Department of Terengganu for providing the hatchlings and Tn. Hj. Umar Salleh of UPM for use of the hatchery facilities. En. Hamin assisted in the maintenance of the hatchlings. Dr. Itaru Uchida of Hemeji Public Aquarium, Japan is acknowledged for his very useful suggestions and advice.

E.H. CHAN

*Fisheries and Marine Science Centre
Universiti Pertanian Malaysia
Mengabang Telipot
21030 Kuala Terengganu, Malaysia*

REFERENCES

- DERANIYAGALA, P.E.P. (1939): The tetrapod reptiles of Ceylon, Vol. 1. Colombo. 412 pp.
- FOSTER, P. and C. CHAPMAN (1974): The care and maintenance of young leatherback turtles, *Dermodochelys coriacea* at the Miami Seaquarium. *International Zoo Yearbook*, 15:170-171.

- FRAIR, W. (1970): The world's largest living turtle. *Salt Water Aquarium*, 6(5): 235-241.
- MARTIN, N. (1986): Mission possible. *Texas Shores*, 19(2): 19-22.
- MROSOVSKY, N. (1983): Conserving sea turtles. The British Herpetological Society c/o The Zoological Society of London, Regent's Park, London NW1 4RY. 176 pp.
- PRITCHARD, P. C. H. (1971): The leatherback or leathery turtle *Dermochelys coriacea*. IUCN Monograph No. 1. IUCN, Morges, Switzerland. 39 pp.
- PITCHARD, P. C. H., P. BACON, F. BERRY, A. CARR, J. FLETMEYER, R. GALLAGHER, S. HOPKINS, R. LANKFORD, M. MARQUEZ, L. OGREN, W. PRINGLE, H. REICHART, and R. WITHAM (1983): Manual of sea turtle research and conservation techniques, second ed. Bjorndal, K.A. and Balazs, G.H. (eds.). Center for Environmental Education, Washington D.C. 125 pp.
- SIOW, K.T. (1982): Leathery turtle (*Dermochelys coriacea*) conservation programme in Rantau Abang, Terengganu, Malaysia. p. 83-90. in Ong, K.S. and Jothy, A.A. (eds.). 1982. *Proc. First Mar. Sc. Conf., Malaysian Soc. Mar. Sc., Penang, Malaysia*. 90 pp.
- WITHAM, R. and C.R. FUTCH (1977): Early growth and oceanic survival of pen-reared sea turtles. *Herpetologica*, 33(4): 404-409.

(Received 5 May, 1987)