

MARICULTURE, LTD. - CAYMAN ISLANDS

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MARICULTURE, LTD.

GEORGETOWN, CAYMAN ISLANDS

Billon

New hope for the Green Sea Turtle.



MAR 28 1974

New hope for the green sea turtle

It may seem a paradox for a commercial firm which is building a business in the sale of green sea turtle meat, shells and varied by-products to claim that its activities represent "new hope for the green sea turtle." Yet, that is precisely the claim made by the businessmen and scientists of Mariculture, Ltd.

To support this claim, this brochure will consider economics, research, history and the background and philosophy of Mariculture, Ltd. The reader who approaches with an open mind will, we are confident, agree that what first seemed a challenging paradox is in truth no more than simple fact. And that there will be a direct correlation between the growth and success of Mariculture, Ltd. and the survival of *Chelonia Mydas*—the green sea turtle—as a species.

History in brief: the turtle

Compared with the turtle and tortoise species, man is a relative newcomer on the earth scene. Many turtle species thrived during the Eocene epoch, some 60 million years ago. By contrast, the *Hominidae*—man's early forbears—didn't appear until the Miocene, a mere 20 or 30

million years ago. And *Homo Sapiens* did not come on stage until something more than 100,000 years ago.

From the earliest times of which knowledge exists, turtles occupied an important place in man's world. Aborigines of North Australia honored the turtle as a totem. Some Burmese tribes considered turtles divine and housed them on the sacred grounds of pagodas, feeding specially prepared delicacies to their captive deities. However, the taste for turtle flesh also extends well back into history. The Roman historian Pliny wrote of a cave-dwelling tribe near the mouth of the Red Sea who were pragmatic enough to relish a dinner of turtle, even though they worshipped the beast as sacred.

The Caribbean, Gulf of Mexico and warmer waters of the Atlantic have long been favored habitats for turtles. Here, too, men honored the species in religious symbolism while enjoying the pleasures of turtle steak. Tenth Century Mayans, building their great Yucatan city of Uxmal, decorated a major structure with deftly carved stone turtles and called it the "House of Turtles."

Later still, Columbus came upon some islands south of Cuba where he saw so many turtles on shore and swimming in the shallows that both



land and sea appeared to be studded with little rocks. This led him to call these islands *Las Tortugas*. Today we know them as the Caymans.

The European explorers who followed Columbus quickly came to appreciate turtle meat as a welcome variation from the miserable, scurvy-causing shipboard diet of those years. Explained one 18th Century gourmet, "The meat was sweet and tender, some part of it eating like chicken, some like veal."

All this lip-smacking appreciation was highly flattering to the green sea turtle—most highly prized of the species encountered—but it was also the cause of the species' nearly becoming extinct. As the population of the Caribbean and other warm-water shores in the western Atlantic built up, hunting the turtle and its eggs became a major activity. By the middle of the Twentieth Century the green sea turtle was well on its way to disappearing. University of Florida marine biologist Dr. Archie Carr stated that "... now many of the beaches which used to swarm with nesting turtles never see one, and the toll of over-exploitation ... has been reflected in declining harvests of eggs."

It was during the middle years of this century, with the growth of

research in the marine sciences and the study of wildlife, that man began to relate the decline of the green sea turtle to his own uncontrolled hunting. He had toppled the delicate balance of nature, where often only one or two hatchlings in 500 survive to adulthood.

Early in the 1960's began a series of events which led to the fact that today one can justify some optimism about the future outlook for the green sea turtle. It started with some scientists who began studying the turtles in the upper Florida Keys. In time, this research extended to the Cayman Islands. Study and thought led the researchers to the paradoxical conclusion which began this brochure: the green sea turtle's survival as a species could be assured only if the animal were raised commercially for its meat and other valuable by-products. Thus was born the idea for Mariculture, Ltd.

History in brief: Mariculture, Ltd.

In the late 1960's, the time was ripe for a new kind of venture—the world's first commercial sea turtle "farming" operation. World markets for turtle meat and by-products were large and growing. But the supply of turtles in the wild was diminishing. Leading



conservationists and scientists were openly stating what has been already proposed as the theme of this booklet:

"If the sea turtle is to survive, it must be farmed." (Dr. Jacques Yves-Costeau, in one of his famous sea-exploration films.)

"The green sea turtle is the world's most important reptile, and sea farms for turtles are a necessity." (Professor Harold F. Hirth, in a report to the U.N. Food and Agricultural Organization.)

"There seems no inherent reason why *Chelonia Mydas* should not become a semi-domesticated meat animal of great value . . . Successful evolution of such culture would not only extend the means of taking food from the sea, but would quickly take the pressure off the wild sea turtle populations, and thus help save the species for the distant future." (Dr. Archie Carr, quoted by the International Union for Conservation of Nature and Natural Resources.) Another indication that the time was ripe was the fact that, while detailed knowledge about the green sea turtle was still relatively scant, sufficient research had been done to indicate the possibility of success in a well-managed, soundly-based undertaking with a responsible scientific character.

Considerations such as these led, in August of 1968, to the incorporation of Mariculture, Ltd. Grand Cayman Island was chosen as the headquarters for this corporation for several reasons. Historically, the Caymans had been a favored habitat and feeding ground for wild green sea turtles, although the depletions of recent years had seriously changed that picture. The Caymans are a British Crown Colony which enjoys extremely stable government, a healthy economy and a population of capable, hard-working people. Jet air service makes the islands readily accessible from South and Central America, other parts of the Caribbean, and Miami, and through Miami from all of Europe. Like the Cayman people, all the climates—political, financial and meteorological—are friendly.

The company's Board of Directors and management incorporates a strong mix of businessmen and scientists from the United Kingdom and the United States, with representation of local Cayman interests too. From the first, the company's orientation has been heavily in the direction of practical research into the rearing, mating, nesting, hatching and life of the green sea turtle. This was because the existing body of knowledge was sparse and successful farming—be it of



land crops or marine "livestock" — depends on knowledge.

Mariculture, Ltd., has also engaged in major projects aimed at conservation of the green sea turtle species — projects which have resulted in the hatching and growth of turtles in percentages far above that achieved by nature. This is a clear example of how Mariculture's own commercial interest in preserving the species coincides with the conservationist's interest in the same goal.

During the years of its existence, Mariculture has invested enormous sums of money and a staggering number of man-hours in research and conservation. And it is in the very nature of Mariculture's business to continue along these lines. Indeed, it is envisioned that the company will be — as a result of its success — in a position to donate healthy hatchlings from its own breeding operations to help repopulate the beaches and seas.

It would be no more than candid to acknowledge that the company has strong commercial motivation for the extensive investment it has made and continues to make in turtle

research and conservation. But whether the motivation is commercial or not, the end result — so far as the turtle is concerned — remains the same, the very beneficial end result that for the first time in centuries there is promise of reversing the downtrend in the number of green sea turtles in the world.

The simple fact is that Mariculture's headquarters on Grand Cayman, and all the research and conservation activities that reach out in some cases thousands of miles from Grand Cayman, represents a happy three-way alliance of interests between Mariculture, with its commercial objectives, the conservationists devoted to preserving and restoring *Chelonia Mydas*, and the scientists dedicated to learning more about the green sea turtle.

Fig. 1: Hatch results from Mariculture's first mating and nesting in captivity, May 19, 1973. Note the percentage of hatching achieved and of hatchlings to enter the water — an impressive 91% of the total eggs laid. This is far higher than the percentage achieved in nature, even when the eggs are laid in favorable environments.

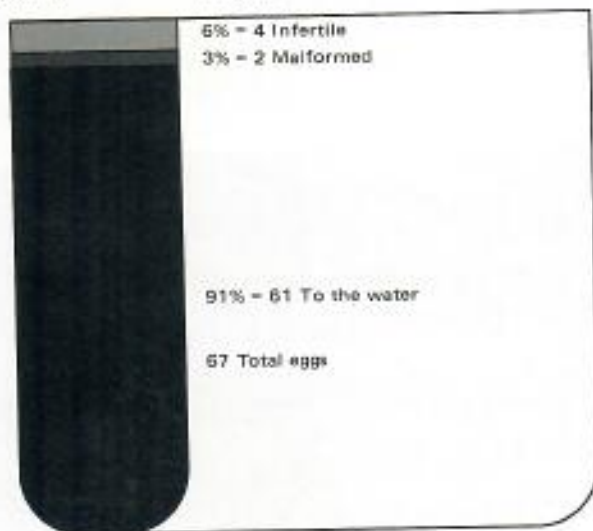


Fig. 1. Hatch results from Mariculture's first mating and nesting in captivity on May 19, 1973.

It is this alliance of interests which lies behind such Mariculture activities as the painstaking tagging projects carried out in several areas . . . the rescuing of "doomed" eggs from inhospitable shores for incubation and hatching . . . the experiments to determine the most beneficial diet . . . to touch briefly on only a few. (Further on, some Mariculture research and conservation activities will be discussed in some detail to document the value of the company's work in terms that will be meaningful to conservationists and scientists.)

Through its years of operation, Mariculture has established a pattern of close cooperation with and support of scientists pursuing turtle and marine biological research.

The company has retained a number of eminent scientists in the fields of physiology, microbiology and virology as full-time and part-time consultants to develop turtle technology and to maintaining and enhancing turtle health.

For many other researchers the company provides support in the form of supplying fertile eggs,

hatchlings and full-grown turtles, and by making available the use of its experimental pens and tanks at Turtleland on Grand Cayman. And one of Mariculture's more significant projects is sponsorship of a non-profit making Division of Conservation and Research, headquartered at the farm on Grand Cayman. The company aids the Division with funds and practical assistance.

In short, while the initial motivation for Mariculture's extensive support of research and conservation activities is unquestionably commercial in nature, the end results are none the less beneficial. And a great deal of the research and conservation work leads

Fig. 2: Conservation release of hatchlings from eggs collected from inhospitable environment. Laid on beaches whose volcanic sand had previously been proved to render most eggs infertile, these eggs were collected and artificially incubated and hatched by Mariculture personnel. Hatchlings were deposited on the sand to crawl to the shallows for introduction to the water, then re-netted and conveyed offshore beyond the waiting predator fish.

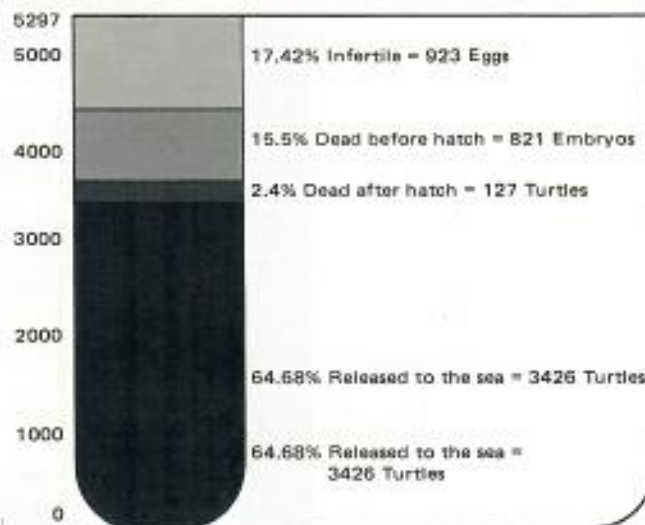


Fig. 2. Conservation Release, April 1973

to no direct benefit to Mariculture in a commercial sense, and thus might also be termed a useful by-product.

One further aspect of Mariculture merits mention at this point. By the very nature of the animals it deals with, this is one of the few enterprises which can be introduced into underdeveloped tropical islands. In the few years of its existence to date, Mariculture has already become Grand Cayman Island's biggest private employer. And the 1973 sales figures make turtle products the leading export commodity of this British colony.

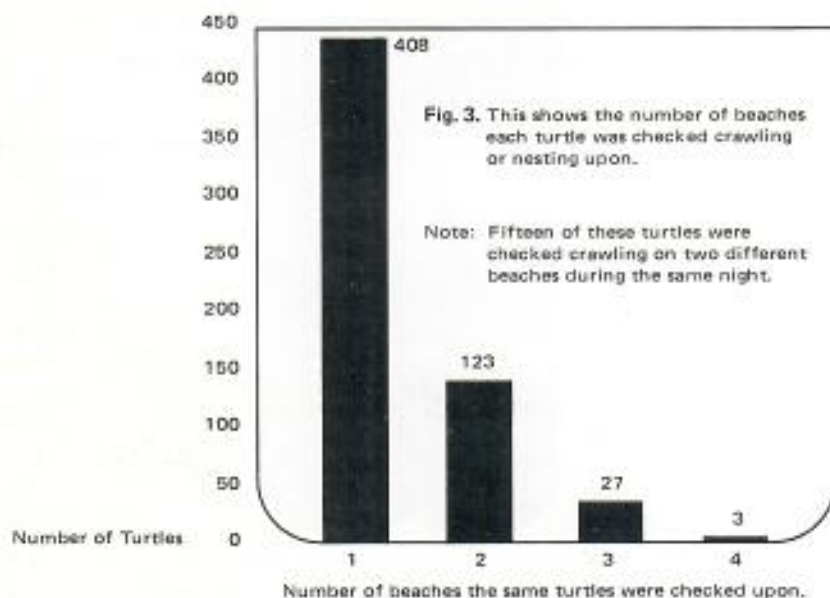
To arrive at this point, Mariculture has invested more than three million dollars. But there is one possible cloud on the horizon of this scene, which otherwise appears so favorable for science, the turtle and Grand Cayman as well as for Mariculture itself. The continued growth and success of Mariculture—and hence the continuation of the derived benefits mentioned above—depends on Mariculture's ability to continue collecting turtle eggs (mostly from inhospitable locales where

hatching would otherwise be most improbable) and on Mariculture's continued access to major world markets for its "farmed" turtle products.

But these Mariculture activities may be threatened by certain proposed international agreements and national legislation which makes no distinction between uncontrolled hunting in the wild and the marketing of "wild" turtle products, on one hand, and the controlled egg collecting and marketing of "farmed" turtle products, on the other.

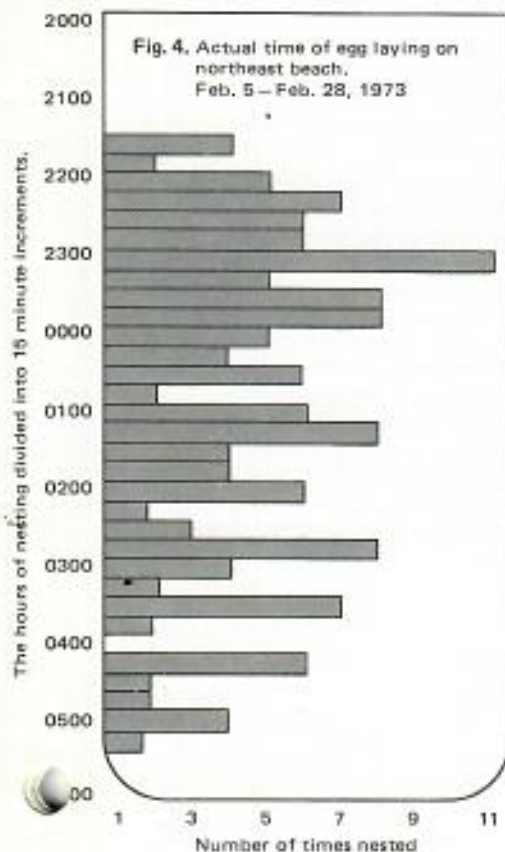
Unless these agreements and this legislation is structured to make this important distinction, the effects will be counter-productive to the objectives shared by Mariculture,

Fig. 3: With more than three-fourths of this group of turtles found only upon one beach during the nesting period, it can be assumed that previous belief that females return to nest on the beaches of their own hatching is for the most part valid. However, a surprisingly large percentage, though still quite a minority, were found in nesting activity on two or more beaches.



serious scientists and sincere conservationists. There will be increased incentive for uncontrolled hunting of the turtle and for distributing its products through a world "black market." There will be further depletion, and probable extinction, of the very species which all wish to preserve. The company will be completely unable to continue its own research and conservation activities and to lend its support to

Fig. 4: While egg laying took place during almost all quarter-hour periods between 2130 hours and 0530 the following morning, there is clearly a peak of activity just before midnight. However, Mariculture observers noted some surprising lesser peaks in the early morning hours too.

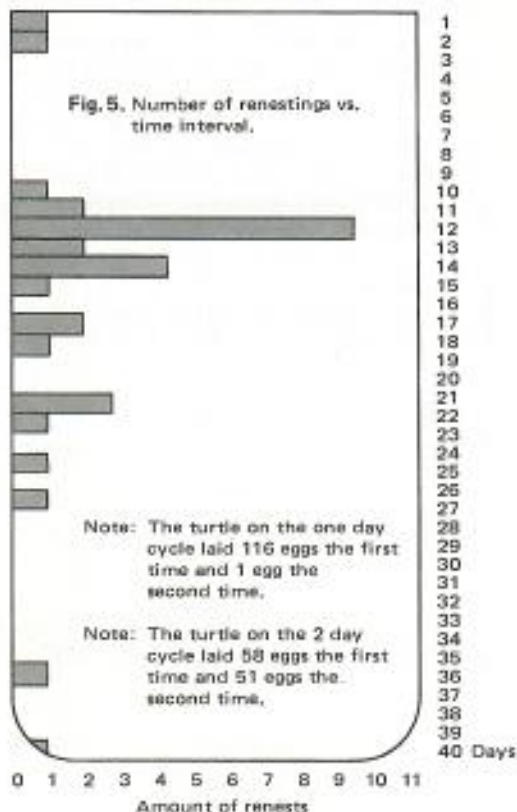


the research and conservation activities of others.

A major breakthrough by Mariculture and "new hope for the green sea turtle"

An historic event of major significance to all who are sincerely concerned for the survival of the green sea turtle species occurred on May 19, 1973. On that day, at Mariculture's Turtleland on Grand Cayman Island, female green sea turtles who had mated in captivity

Fig. 5: The cyclical nature of re-nesting patterns is clear from this chart. A semi-lunar cycle seems to be indicated for most of the turtles studied. As noted in the text, the females who nested in captivity at Mariculture's Grand Cayman facility followed the same cyclical pattern as turtles in the wild.



crawled out on Mariculture's man-made beach to nest and lay eggs which 60 days later successfully hatched. This was the first time in man's knowledge that *Chelonia Mydas* had achieved a complete breeding cycle in captivity.

Of interest to scientists and conservationists will be the following, excerpted from a report prepared by Mariculture observers.

Over three years ago (in 1969), male and female green sea turtles captured on the breeding beaches of Surinam, Guyana and Costa Rica were placed in an artificial breeding enclosure at Mariculture's Goat Rock headquarters—the start toward the long-term goal of becoming self-sufficient in terms of turtle egg production. Considerable thought, study and experimentation went into nutrition, environment, water characteristics, sex ratio and stocking density. But with prior experience totally non-existent, progress was slow. However, the reward for three years of investment and work and waiting came in April of 1973 when mating activity began to take place.

The mating activity seems to have been stimulated by the introduction of two male turtles captured on the breeding beach in Surinam earlier this year. Prior to the introduction of these two males, mating activity

had been observed on but one or two occasions in the three-year period.

The new Surinam males were placed in the pond on April 12, 1973, and within 30 minutes one of these turtles was engaged in copulation. Matings occurred with increasing frequency after this, involving not only the new Surinam males but also males who had been in the breeding pond for two to three years. Females observed mating were from Surinam, Guyana and Costa Rica stocks. Mating continued on a regular basis through June 4, with occasional observations of mated pairs or mating attempts after this time.

During the period of peak mating activity as many as four pairs were observed mating at one time. Mating can be a protracted event for the green sea turtle, and one pair was observed copulating for 12 days in succession. The turtles exhibited normal courtship and breeding behavior in their artificial environment.

The first nesting attempt occurred 35 days after the onset of mating activity. Some turtles crawled onto the artificial beach during the night and dug body pits, but returned to the water without laying. On day 38, however, the first turtle nested and deposited a clutch of 68 eggs.

The eggs from this nest have now hatched, producing 61 healthy turtles which entered the water. These hatchlings are the first ever known to be produced in a captive situation. (See Fig. 1 for graph of these hatch results.)

Extracts from Mariculture turtle tagging for conservation purposes.

Date 1973	Time	Beach	Tag #	Lengths	Width	Type Measurement	Eggs Laid	Comments
Feb. 17	03.30	D	B1890	45"	43"	2	Not sure	
Feb. 18	22.25	D	B1891	49"	40"	2	136	Recorded egg sequence
"	22.50	D	B1892	44 1/2"	45"	2	DNL	Chunk out of left rear flipper
"	23.10	D	B1893	42"	40"	2	74	
Feb. 17	23.40	F	B1894	44 1/2"	31 1/2"	1	DNL	
"	23.50	F	B1895	42 1/2"	33"	1	DNL	One barnacle on mid-dorsal
"	23.50	F	B1896	43"	33 1/2"	1	DNL	Right rear flipper missing a piece
"	00.10	F	B1897	40 1/2"	32 1/2"	1	DNL	Had been digging at least 2 hours
"	02.00	N	B1898	42 1/2"	32 1/2"	1		
"	02.06	N	B1899	43 1/2"	31 1/2"	1		* Notch in left rear scouter - scar from old tag in right front flipper
"	02.10	N	B1900	43 1/2"	35"	1		Tagged digging
Feb. 12	06.20	B	B1928	45 1/2"	33 1/2"	1	DNL	Right front flipper split half-way in from end - 3 large barnacles on right side and left marginals
Feb. 13	21.12	N	B1929	40 1/2"	32 1/2"	1		Notch in left rear marginal
"	21.20	N	B1930	46 1/2"	35 1/2"	1		Notch in 2nd marginal from left rear
"	21.35	L	B1931	43 1/2"	33"	1		Big barnacles on rear dorsal scute
"	21.45	K	B1932	44 1/2"	34 1/2"	1		
"	22.30	J	B1933	44 1/2"	35"	1		Notch on right rear marginal
"	23.40	F	B1934	41 1/2"	30 1/2"	1		
"	23.45	F	B1935	43"	32 1/2"	1		Old tag of years before had torn out - well healed
"	23.50	F	B1936	45 1/2"	35"	1		
"	23.55	F	B1937	42"	32 1/2"	1		Notch in right rear marginal
"	01.30	A	B1938	45 1/2"	34 1/2"	1	DNL	1 nest try
"	01.35	B	B1939	45 1/2"	34 1/2"	1		Large chunk out of left side completely healed, also hole in right front flipper
"	01.45	B	B1940	44 1/2"	34"	1	145	
"	02.50	E	B1941	42 1/2"	34"	1		
"	02.55	E	B1942	41"	32 1/2"	1		
"	03.10	E	B1943	44 1/2"	35 1/2"	1		Notch in left rear marginal
Feb. 14	22.10	C	B1944	40 1/2"	34"	1	DNL	Dug 1 nest
"	22.35	B	B1945	46 1/2"	34 1/2"	1		
"	22.37	B	B1946	44 1/2"	35"	1		
"	22.45	B	B1947	41 1/2"	31"	1		
"	00.05	C	B1948	-	-	1	DNL	Dug 1 nest
"	00.40	E	B1949	41 1/2"	32 1/2"	1		Large bump on mid dorsal scute about 1/3 grapefruit size - part of left rear flipper missing

Nesting has continued at an ever increasing pace, with as many as nine nests produced in the eighth week of nesting activity. Sixteen different turtles have nested to date, nine from the Surinam/Guyana stock and seven from the Costa Rica stock.

The nesting behavior of these turtles appears to conform to that observed in wild populations despite the artificial environment. The re-nesting interval is a relatively constant ten days. Individual turtles have nested up to five times, with one particularly prolific individual producing 898 eggs at the time of this report. The average clutch size for the Surinam/Guyana females is 139.67 eggs with a mean egg size of 45.00 mm.

The Costa Rican turtles average 83.78 eggs per clutch, with a mean egg size of 43.85 mm.

It is interesting to note that the nesting activity of these "imported" turtles in Mariculture's man-made facility is occurring during the normal nesting period for wild green sea turtles in the Cayman Islands.

Our turtles from the beaches of Surinam/Guyana and Costa Rica have evidently adapted their breeding activity to local Cayman conditions controlling nesting seasonality.

Total egg harvest to date is 8000+ eggs, with a predicted yield of over 10,000 eggs for the 1973 nesting season, and it is expected that over 90% in captivity will be successfully hatched.

The production of turtle hatchlings under captive conditions is indeed a significant advance in the field of turtle "farming." Large scale egg production is now a matter of refining our management techniques and increasing the size of our breeding herd.

Future implications of this breakthrough in captive reproduction are extremely important. Genetic selection for faster growing, healthier turtles is now a possibility. Turtle farming can look forward to becoming free from its dependence on wild nesting populations. A truly self-contained farming operation can supply turtle meat and by-products for the world market, making it uneconomical for anyone to hunt the dwindling stocks of wild animals for commercial purposes. And we can look to a future time when the depleted population of wild turtles can be replenished with some of the turtles bred and contributed by Mariculture.

The above report, already significant in the breakthrough it describes, draws even greater importance in the light of the quotations cited earlier in this brochure. The ideas of Dr. Jacques Yves-Costeau, Professor Harold F. Hirth and Dr. Archie Carr are indeed on the threshold of realization.



**Some other examples
of Mariculture research and
conservation activities**

Since the very establishment of a breeding herd large enough to form the foundation for commercial farming requires collecting eggs in the wild, Mariculture has developed guidelines and procedures to assure that this collecting activity also contributes to the preservation of the species and that healthy hatchlings are maximized.

All egg collecting is done, of course, with the complete approval of the government having jurisdiction over the nesting beach.

The majority of eggs collected for incubation and hatching by Mariculture are selected from inhospitable environments where, in the natural course of events, successful hatching would be most improbable. This may be because the nesting beach is made up of sand with a high lava content, which renders most of the eggs infertile. Or, in other cases, the eggs may have been deposited on a beach subject to severe erosion, so that most of the eggs end up being washed into the sea prematurely and thus would fail to hatch. (See accompanying photograph.)

By collecting eggs from such environments, Mariculture can increase by an enormous order of magnitude the percentage of successful, healthy hatchlings.

The graph in Fig. 2 illustrates a project involving 5297 eggs collected in April of 1973 from a beach where a high proportion of volcanic ash or dust in the sand rendered most eggs infertile, as had been established in previous studies. The eggs collected were placed in a special type of styrofoam incubating box developed by Mariculture personnel, and artificially incubated and hatched. After hatching, the turtles were allowed to crawl down the beach into the in-shore waters. But, to give them the greatest possible chance for survival, they were there netted and transported offshore. Then these young hatchlings were released beyond the ring of predatory blackfish and groupers waiting hungrily just beyond the shallows. The number thus released, 3426 turtles, was far greater than could have been expected to hatch and make their way to sea if left to the vagaries of nature.

**New insights into
nesting and egg laying habits**

As another example of the contribution made to scientific



knowledge by Mariculture's studies of *Chelonia Mydas*, Figures 3 and 4 show some findings related to nesting and egg laying.

An area of great interest to researchers has been the instinctual pattern which appears to bring female green sea turtles back to the beach where they themselves hatched when nesting and laying time approaches, perhaps three or more years after their own birth. From the Mariculture studies, it appears that the female turtles do indeed tend to return to their own nesting beaches, but the instinct is not quite so unerring as had been thought.

Often a nesting female will "miss" by from several hundred yards up to several miles—still quite an impressive navigational feat considering the interval of years and the distances of thousands of sea miles she may have roamed before coming back to nest. The graph in Fig. 3 shows that, in a nesting session of several nights, more than 20% of a checked group of females were found crawling on more than one beach. However, romantic tradition is by no means completely destroyed. Well over 75% limited their activities to one beach, and in the absence of positive knowledge to the contrary we can hold fast to the conviction that this

great majority were crawling and nesting on the beaches of their own hatching.

Egg laying "by the clock" and (maybe) by the moon

By careful observations on Ascension Island beaches during the period February 5 to February 28, 1973, it was determined that there is a very clearcut time pattern to green sea turtle egg laying. Fig. 4 shows that the laying—all at night, as has long been known—is scattered through the period from 2115 hours to 0515, but there is a definite peak to the curve between 2200 and 2400 hours.

With the above studies helping to pinpoint the laying pattern as to hour of the night, there still remain interesting questions about the laying pattern as to longer-term cycles. Mariculture studies referred to above indicate a very definite tendency, on Ascension Island, to re-nest in periods of from 10 to 15 days, strongly suggesting a semi-lunar cycle (Fig. 5). But when Mariculture observations in other nesting areas are considered, the picture is seen to be not quite so simple. For example, the nightly nesting pattern of green sea turtles in Surinam follows an equally definite *tidal* cycle. And while there is a strong



relationship between moon cycles and tidal reactions, there are also inconsistencies which remain for the researcher to resolve.

The above-cited material represents but a small fraction of the careful research done by company personnel, and clearly indicates how closely related are Mariculture's commercial interests and the gathering of knowledge about these fascinating creatures. Mariculture's efforts have, indeed, served the scientist and the conservationist very well. And the continuation of such efforts, with the resulting accumulation of knowledge, can only continue and grow if Mariculture is permitted to continue and grow. In this sense too, then, the success of Mariculture represents "new hope for the green sea turtle."

The importance of developing food from the sea.

Thus far in this brochure, we have discussed several reasons why the serious researcher and sincere conservationist should consider the success of Mariculture important: the opinion of leading authorities that only commercial farming can assure the long-term preservation of *Chelonia Mydas*; the company's investment of over three million dollars and years of work in turtle

research and conservation; Mariculture's support of the work of independent researchers; the fact that availability of superior "farmed" turtle meat and by-products will eliminate the economic incentive for a "black market" in products of the wild turtle; Mariculture's significant contribution to scientific knowledge about the green sea turtle; and, perhaps most significant, Mariculture's achievement in bringing about the first mating-nesting-hatching cycle ever to take place in captivity. There is one more important consideration to be weighed.

The world's population is increasing at a rate alarmingly faster than the rate of increase in the world's food supplies. One-third of the world's people suffer from malnutrition right now. Scientists tell us that the world's food supply must *triple* by the year 2000. Yet, there is a limit to the land suitable for farming and stock-raising, and a limit to how much the productivity of that land can be increased.

On the other hand, it is estimated that one acre of salt water five feet deep can produce 200,000 pounds of green sea turtle per year. The same volume of water would produce only 4,000 pounds of catfish or 600 pounds of milkfish, two other species



under serious consideration for "sea farming." And for an illuminating contrast, one acre of land produces a mere 800 pounds of beef.

Given these facts, it is little wonder that thoughtful people—scientists, people in government, and many ordinary concerned men and women—ponder man's future on this globe that is almost three-fourths covered with salt water, and think in terms of food from the sea. And given the extraordinary protein value of turtle meat, Mariculture's development of commercial farming technology for the green sea turtle assumes major importance. Clearly, the successful realization of the idea behind Mariculture holds enormous promise not only for the preservation and restoration of the green sea turtle, but also for the feeding of man himself.

Summary

If the international convention and the national legislation based on it are changed to encourage the responsible type of commercial green sea turtle research and farming done by Mariculture, the prospect will improve immediately. For one thing, the meat and by-products of the farmed animal are far superior to those of the wild animal. For another, competitive operations like Mariculture can assure world markets an adequate supply of turtle meat and by-products, thus helping hold prices and supplies at a level which make illegal hunting of the wild

animals unprofitable. On the less commercial side, the research and conservation activities of Mariculture can not only be continued, but actually extended, as commercial success makes greater funds available. And finally, the day will be brought closer when Mariculture will be in a position to draw from its own then self-sustaining herds a percentage of hatchlings to be released in the wild rookeries, thus speeding up the return to the seas of the world of great numbers of this fascinating, strangely beautiful creature.

In short, Mariculture has already brought closer—by its research and conservation activities, especially by its success in achieving a complete breeding cycle in captivity, and by its development of commercial "farming" technology—the dawn of "new hope for the green sea turtle." Now it remains for dedicated scientists and sincere conservationists to see that this dawn of new hope is realized, by exerting every effort to make proposed legislation distinguish between trade in products derived from uncontrolled hunting of turtles in the wild and trade in products derived from commercially farmed turtles. And by providing, in this legislation, for the carefully regulated collection of eggs by responsible interests, such as Mariculture.

There exists here a rare opportunity for businessmen, scientists and conservationists to work together toward a goal they all share: new hope for the green sea turtle.

MARICULTURE LIMITED

There are eleven directors,
with the following five serving as
the executive committee:



IRVIN S. NAYLOR

President and one of the founders
of Mariculture Limited.

Irvin Naylor was born in Maryland
in 1935, and educated at McDonogh
School, Maryland and the University
of Miami where he spent a year as
a graduate instructor.

He went on to be production
supervisor at Stanley Building
Specialties Co., Florida, and then for
the next three years plant manager
at Penn Wood Box Supply Co.,
Pennsylvania.

Mr. Naylor founded a number of
his own companies which include
Lok-Box Inc. Pa., Ski Roundtop Inc.
Pa., Cor-Box Inc. Pa., Ski Yellowstone
Inc. Montana, and Mariculture Ltd.,
Cayman, B.W.I.

He also developed the Racquet Club
of York, Pa., is a director of the York
Water Co. Pa., and owns a tobacco
farm, several dairy farms and
substantial real estate.

Mr. Naylor was chairman of the
York County March of Dimes and a
director of the American Institute of
Industrial Engineers from 1963-1964.
His home is in York, Pennsylvania.



MICHAEL R. GOODIER

Managing Director —
Mariculture Limited.

Michael Goodier was born in 1937
and educated at Wallasey Grammar
School, Harris College and
Wellington House.

As a student at Leyland Motors
he completed courses in all practical
aspects of mechanical engineering,
including metallurgy, laboratory work,
engine vehicle testing and military
equipment testing. He was connected
with original test work on the Pi
Lightning Fighter and Canberra Jet
bomber. He won the Sir Henry
Spurrier Award for student
apprentices.

After successfully studying thermo-
dynamics, workshop technology,
physics and business management,
Michael Goodier worked for two years
in Leyland's London head office,
with specific reference to European
technical sales for Middle East
countries, Holland, Germany, France
and Spain.

He left Leyland Motors to develop
a number of companies which covered
all aspects of commercial fleet
maintenance, pressure vessel

fabrication shop, private vehicle sales and repairs, and two retail motor shops. Eight years later he sold all these interests to a north-western commercial group.

A short-term assignment took Goodier to the West Indies to advise on heavy equipment maintenance and quarry work. After six months he joined Mariculture, and is now the resident Managing Director in Grand Cayman.



KEITH, J. NORMAN
Finance Director —
Mariculture Limited.

Keith Norman was born in London in 1927, and educated at High Wycombe Grammar and Quintin Schools. He served with the Indian Army in the Far East, and graduated in engineering from King's College, London in 1952.

After two years in professional practice, he spent five years in the U.S.A. in graduate studies, teaching and research at Cornell University, Harvard University and the Massachusetts Institute of Technology, mainly business administration and economics.

Mr. Norman returned to the U.K. in 1957, and spent 13 years with the U.K. Atomic Energy Authority; the last five as commercial director. In 1970 he joined the Commonwealth Development Finance Company Ltd. as regional director responsible for investments in the Caribbean and Latin America.

Mr. Norman became a director of Mariculture Ltd. in 1971 and finance director in April this year.



MARK FISHER
Director—Mariculture Limited.

Mark Fisher, the son of Antony Fisher, was born in 1941, and educated at Eton and Harper Adams Agricultural College, Shropshire. After leaving Harper Adams, he spent six months in the U.S.A. studying modern methods of American agriculture. On his return to the U.K. he became involved in the agricultural side of the broiler chicken business, and with large-scale commercial egg production.

At present, Mark Fisher manages 1,000 dairy cows, on an intensive system. For the last four years he has

also been involved in building up a small earth-moving company, and he has been with Mariculture since its inception.

Mark Fisher is married, with four children. He "commutes" between the family farm at Framfield, Sussex, and the Cayman Islands.



HENRY M. HAMLIN

43 years old.

Educated at the Hotchkiss School, Lakeville, Conn., graduated B.A., Yale University 1951.

Graduate work at Texas A&M and Rochester Institute of Technology.

He lives near Rochester, New York, where he is an officer and director of the Morgan Machine Co., a manufacturer of heavy machinery.

He is a Vice President and director of Riverton Properties, Inc., the developer of the U.S. federally approved New Town of Riverton which will have an eventual population of over 30,000.

In addition, Mr. Hamlin founded and is President of International Raceway Parks which owns and operates four motor vehicle race tracks in Washington, Oregon and California.

The six non-executive directors are:

DR. SAMUEL AYRES, III

Leading U.S. dermatologist in

private practice in Beverly Hills, California, and associate professor of medicine at the University of South California.

MRS. VETA MERREN BODDEN

Managing Director of one of the Cayman Islands' oldest and largest businesses, and director of a local hotel company.

JOHN COLLINS

Manager and secretary of the Bank of Nova Scotia Trust Company (Cayman) Limited, and company secretary of Mariculture Limited.

EDGAR FAIN

Prominent U.S. industrialist.

ANTONY G. A. FISHER, A.F.C.

A founder of the company, aged 57 years old, British economist and author, and one of the pioneers of the broiler chicken industry in Europe. He founded the Buxted Chicken Company Limited, in England in 1954.

ROGER J. WEBSTER

Aged 35 years, regional director of the Commonwealth Development Finance Company Limited, for the Caribbean and Latin America.

DIVISION OF CONSERVATION AND RESEARCH

Head Office: P.O. Box 645, Grand Cayman, B.W.I.

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Professor Sir Alan Parkes, E.B.E., F.R.S., Ph.D., D.Sc., Sc.D., M.A.

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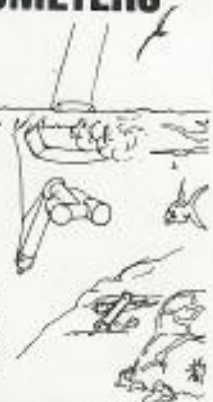
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CAYMAN TURTLE RELEASE

Conservation-minded scuba divers visiting the Cayman Islands are combining the fun of diving with a useful contribution to marine ecology. They are stocking the reef surrounding the Cayman Islands with turtles released from the only sea turtle breeding farm in the world.

The research arm of the Cayman Turtle Farm Ltd. is restocking Cayman waters with over 3000 green sea turtles and scuba divers are releasing the turtles in their underwater homeland.

The Cayman Turtle Farm Ltd. also produces turtle meat and turtle products such as jewelry and cosmetics for export. Responding to what many ecologists regard as an ill-considered ban on turtle products in the United States, the Cayman facility is slowing down its commercial operations.

"But we are keeping the research department intact," said Dr. Jim Wood, director of the research facility. "We are releasing the turtles and studying how well they adapt in their natural environment and their ability to repopulate."

For a \$5 fee, divers take a turtle on their dive and swim with it as it is released. Participants in the program include Sunset House, Casa Bertmar, F.L.A.G. Dive Services at the Royal Palms Hotel, Scuba Cayman Ltd., and Bob Soto's Diving Ltd. Also participating are underwater photographers Bonnie Charles and Dickie Wells.

All turtles released are tagged and numbered by the Turtle Farm Research Department. Later this year, an experimental group of turtles will be given a special skin graft on their shells which is expected to identify them as long as they live — long after conventional tags have worn off. Turtle Farm biologists are tracking the turtles to note their dispersion around the Cayman Islands, taking particular note of their feeding habits. "We have sighted a number of the turtles already," said Dr. Wood. "They are in a nice dispersion."

Scientifically reared turtles actually have a better chance of surviving to maturity than turtles hatched in the wild, according to Dr. Wood. "By head starting the turtles and releasing them when they are older and stronger, predators can't hit them while they are hatchlings. Young turtles, about a year old, have a much higher survivability rate than hatchlings."

Several hundred turtles have already been released, and the program will continue through the year. Divers visiting the islands aren't the only visitors who can free turtles. For the same \$5 fee, turtles can be released from a specially built platform during a tour of the Cayman Turtle Farm.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

4/5/82

To : George

From: Larry

Thanks for copies of correspondence — incidental catch "awareness" is a tough cookie to get across and accepted by fisheries oriented folks. Example. shrimp trawlers in SE. So keep working on your documentation and if it is a significant problem it will get recognized as such.

Our thoughts on mariculture exemption were similar

(over)

I hope Washington sticks
by its convictions (I
think Richard Roe is of
same opinion).

Your problem re: taking
Hawaiian greens sounds
serious (like some feel
about the Caretta population
in SE — although they don't
want to eat them here; just
kill them accidentally in
nets). (SE Region)

Final draft of recovery plan
to NMFS in about 2-3 weeks
with meeting in Miami
sometime soon afterward.

Do not copy or distribute... your info only



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

SEFC, Panama City Laboratory
3500 Delwood Beach Road
Panama City, FL 32407

March 25, 1982

F/SEC5:LHO:meg

TO: F/SER - J. Brawner

THRU: F/SEC5 - E. Nakamura *E. Nakamura*

FROM: F/SEC5 - L. Ogren *L. Ogren*

SUBJ: Comments on a proposal for trade exemption for maricultured green sea turtle products.

It is the opinion of this reviewer that the NMFS justification for protecting the green sea turtle from legalized commercial trade and not to grant an exception for mariculture operations and its products is still valid (as stated in the EIS and subsequent rulings on an appeal for trade exemption status).

To say that our past protective measures are not effective is simply not true; the results from these protective measures are not all that dismal and the future outlook is not as pessimistic as stated in the petition. It is also too early to make a judgment concerning the effectiveness of our management plan. Commercial exploitation of the Caribbean population of Chelonia has been greatly reduced in Nicaragua with the closing of three freezing plants, exporting facilities, and cessation of large-scale netting operations on the Miskitw Bank. This action, along with the establishment of the Tortuguero National Park and subsequent protection of the major nesting ground for Chelonia in the western Atlantic has greatly benefited this particular population as observed by an increasing trend in reproductive effort. There is some hope, therefore, that these stocks may some day be harvested on their foraging grounds and can again provide a high protein diet to Caribbean consumers. Because of significant gaps in our knowledge concerning certain vital aspects of their life history and insufficient data on stock sizes, efforts to commercialize or cause an increase in existing trade should be avoided.

With regard to the biological information submitted by Cayman Turtle Farms concerning the characteristics of their brood stock's history, reproduction and hatching success, etc., this reviewer has no way to corroborate it or refute it. Certification of the farm's capacity to function as a "closed-cycle" operation by independent observation would appear to be a difficult task. Indeed, with new sea turtle "farms" being developed in Surinam in the western Atlantic, and on the island of Europa and islands in the Seychelles (in the Indian Ocean), just how the NMFS would certify their legal status for inclusion under an equitable mariculture exemption such as is being proposed, would also prove difficult.

To say that "... the agencies' approach of protecting the sea turtle by outlawing its commercial use is inadequate" does not consider all the actions taken by the Federal government with regard to commercialization of endangered



or threatened populations of Chelonia. In order to prevent increasing demands on natural stocks, farms and markets should not be encouraged at this time to expand their marketing efforts beyond their existing outlets. A proposal to delist local populations of Chelonia currently protected by CITES, such as Surinam's petition, would be premature and would trend to commercialize further the species elsewhere, and negate the gains in turtle populations attained thus far.

cc:

F/MM - R. Roe ✓
F/SEC - W. Fox
F/SECx4 - H. Kumpf

ACTION: Notice.

SUMMARY: On January 22, 1982, The Pacific Legal Foundation and the Association for Rational Environmental Alternatives filed a petition for rulemaking with the Fish and Wildlife Service of the Department of the Interior and the National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Department of Commerce on behalf of the Cayman Turtle Farms. The petitioners are seeking an exemption for captive-bred green sea turtle (*Chelonia mydas*) products from the existing prohibition on commerce in the species (50 CFR Part 17 and Parts 222 and 227 (1980)).

The procedures for petitioning for an exemption are contained in 5 U.S.C. 553(e), 50 CFR 424.14 (1980), and 46 FR 47764 (1981).

FOR FURTHER INFORMATION CONTACT:

Mr. Richard B. Roe, Acting Director,
Office of Marine Mammals and
Endangered Species, National Marine
Fisheries Service, Washington, D.C.
20235, (202) 634-7461

Mr. Ron Lambertson, Associate Director,
Federal Assistance, U.S. Fish and
Wildlife Service, Washington, D.C.
20240, (202) 343-4846.

SUPPLEMENTARY INFORMATION: On July 28, 1978, the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) published joint regulations listing the green sea turtle under the terms of the Endangered Species Act of 1973, as amended, and prohibiting certain commercial transactions involving this species in the United States. The final regulations, which became effective on September 6, 1978, did not provide an exemption for mariculture operations. On August 15, 1978, Cayman Turtle Farm, which is engaged in the captive breeding of green turtles, requested that the mariculture issue be reconsidered and that the regulations be stayed while the decision was being reconsidered. NMFS and FWS agreed to review any new evidence to determine if the regulations should be amended but refused to grant a stay of regulations. On September 5, 1978, Cayman filed suit in the U.S. District Court for the District of Columbia challenging the agencies' decision. In a Decision Memorandum issued on December 5, 1978, the agencies restated their rejection of the mariculture exemption. The decision was judicially upheld in 1979, in *Cayman Turtle Farm v. Andrus*, 478 F. Supp. 125 (D.C. Cir. 1979), *aff'd mem.*, No. 79-2031 (D.C. Cir. December 12, 1980).

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

DEPARTMENT OF COMMERCENational Oceanic and Atmospheric
Administration

Filing of Petition for Exemption From
Prohibition Against Commerce in
Products From Captive Bred Green
Sea Turtle (*Chelonia Mydas*)

AGENCY: Fish and Wildlife Service,
Interior; National Oceanic and
Atmospheric Administration,
Commerce.

cc: all DAs + P's

REG # 17-02-23 # 17-02-24

The Association for Rational Environmental Alternatives founded in 1974, is a non-profit organization engaged in evaluating and developing non-governmental solutions to urban and environmental problems. The Pacific Legal Foundation is a non-profit legal organization founded in 1973.

The petitioners are proposing implementation of a mariculture exemption by means of a permit provision (e.g., 50 CFR 17.32) or a special rule (e.g., 50 CFR 17.42), similar to that proposed by the agencies in 1973. See 40 FR 21977, 21985 (1975).

The NMFS and FWS share endangered species jurisdictional responsibility for sea turtles (50 CFR 222.23 (1980)). The regulations governing the green sea turtles (*Chelonia mydas*) are contained in 50 CFR Part 17 and Parts 222 and 227 (1980).

Dated: March 12, 1982.

William G. Gordon,

Assistant Administrator for Fisheries,
National Marine Fisheries Service.

Dated: March 22, 1982.

G. Ray Arnett,

Assistant Secretary for Fish and Wildlife and
Parks.

(FR Doc. 82-6994 Filed 3-31-82 9:45 am)

BULLETIN CODE 2910-02-02

BULLETIN CODE 4910-02-02

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IUCNATURE GLAND

Référence/Reference:

SSC/RFS/pc
Sa/3/4-3

Professor Archie Carr
Graduate Research Professor
Dept of Zoology
University of Florida
223 Bartram Hall
Gainesville
Florida 32611
USA

20 April 1982

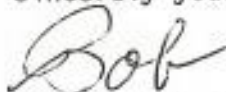
Dear Archie,

Lee Talbot recently received from Dr. Mittag a very attractively done and professionally styled set of information materials on turtles and farming based on their new "Turtle Gallery" I & E effort at Cayman.

I am sure you should review it and determine whether IUCN should take exception to anything it contains, or indeed comment in any other way.

Did you receive a copy, or is one accessible to you? If not, I will send ours. I have also asked Dr. Mittag for another copy if such can be spared. (It looks pretty expensive.)

Sincerely yours,



Robert F. Scott
Executive Officer
Species Survival Commission

cc: G. Balazs

DR. MITTAG VERWALTUNGSGESELLSCHAFT MBH

Professor Archie Carr
University of Florida
Department of Zoology
223 Bartram Hall
Gainesville 32611 - USA

Düsseldorf, April 5, 1982
JM/if

Dear Professor Carr,

maybe you don't recall our meeting at the World Conference on Sea Turtle Conservation in November 1979. But certainly you remember Cayman Turtle Farm.

The enclosed folder is a diminutive black & white version of the "Turtle Gallery" in the newly established information center at Cayman Turtle Farm. Other items on display include a movie which shows a turtle nesting on the farm beach; an aquarium featuring hatchlings (in season); the different varieties of pelleted food used on the farm; a mock-up incubation box; papers presenting scientific findings which were achieved on the farm or with material from the farm; historic turtle fishing gear etc. etc.

I do hope you find this information interesting.

Very sincerely, yours

Judith Mittag

Dr. Judith Mittag

NATURAL HISTORY OF THE GREEN SEA TURTLE



△ *PROGANOCHELYS* - the oldest known turtle, found near Rothweil, West Germany, and reconstructed by Max Wild. (Staatl. Museum für Naturkunde, Stuttgart)

▽ The Cretaceous period, from 135,000,000 to 70,000,000 years ago is called the Age of Reptiles. Large and small, they dominated the land and the air, and in rivers and seas, crocodiles and turtles had no rivals. ⊙ Sea Turtle ⊙ Crocodile ⊙ Triceratops ⊙ Stegosaurus ⊙ Tyrannosaurus ⊙ Iguanodon ⊙ Dinosaur eggs ⊙ Giant Flying Saurus ⊙ Ichthyornis ("Fishbird") (André & Vogellechner, Herder, Freiburg)

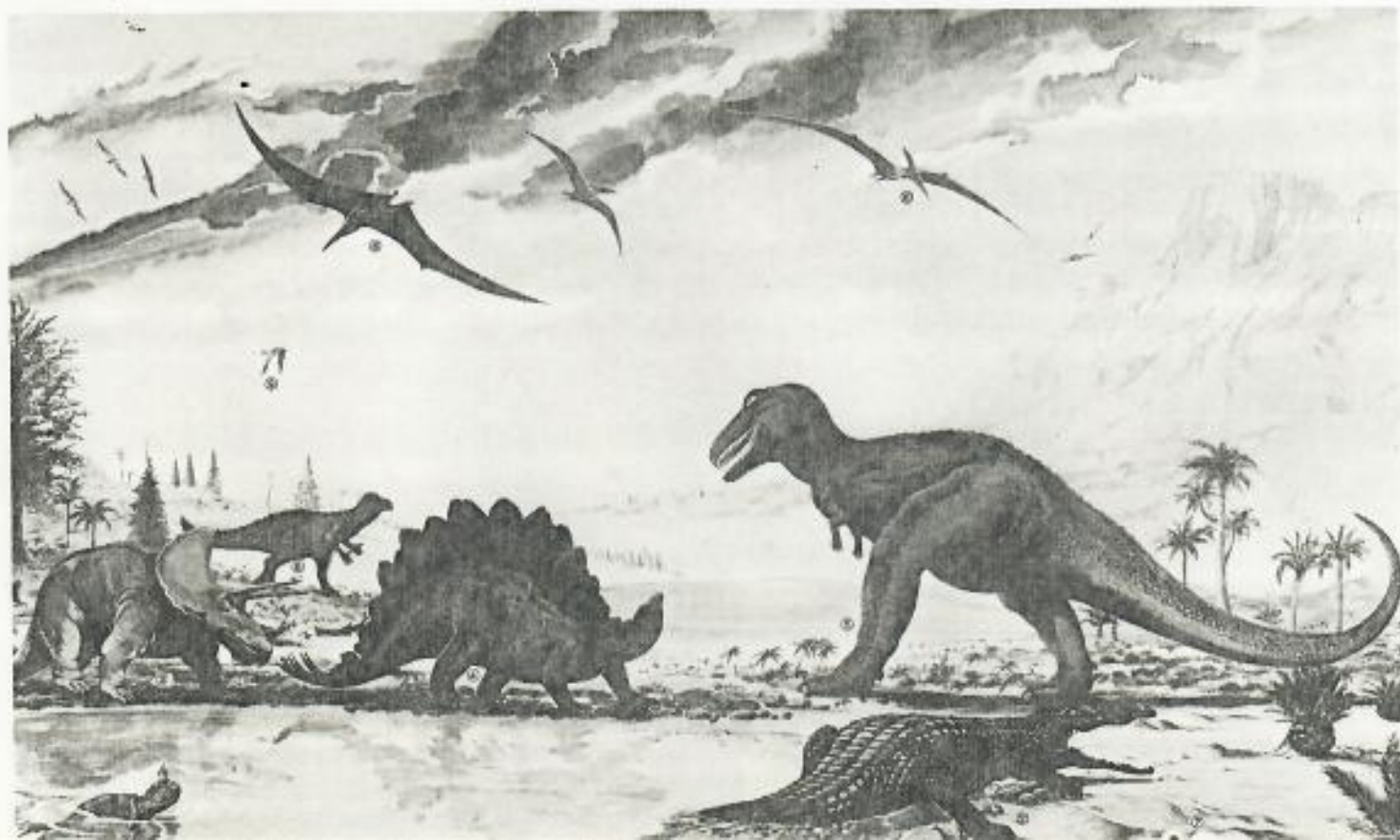
"*Chelonia mydas* is widely distributed between 26°N and 26°S latitude, roughly between the tropics, and breeds freely within that range. The species is thought to be of the order of 100 million years old in biological history and has probably not changed much in that long period. It may truly be said, therefore, to have stood the test of time. It is a remarkable animal. It weighs up to 230 kg; it can survive for several weeks immobilized on its back (literally turned turtle) and for this reason was for centuries the main source of fresh meat for ships' crews in the Caribbean; it can swim 5000 km and lay a thousand eggs, apparently without feeding; it can develop anaerobic metabolism and thus sleep under water; it can produce up to 30% of its body weight as eggs in 10 weeks and it can survive massive injuries. A remarkable animal, indeed..."

(Sir Alan S. Perkes, Christ's College, Cambridge, UK)

Sea turtles essentially spend their entire lives in the ocean with the females leaving the sea only for the purpose of laying their eggs. The nesting process is similar for each of the species. The female leaves the protection of the sea and makes her way cautiously up the beach, eventually select-

ing a nest site above the high tide line. She digs a body pit using her foreflippers. An egg chamber is dug using the hindflippers and approximately 100 leathery eggs are deposited into this chamber. The chamber is covered with sand by the hindflippers and the body pit is filled using the foreflippers. The female then returns to the sea, the nest is left to the brooding heat of the sun. One female will generally lay from 3-6 nests during a single reproductive season with 10-13 days separating each subsequent nest. Usually 55-60 days are required for the incubation process to be completed.

The hatchlings as they leave the eggs still carry a remnant of the yolk which is absorbed during the 3-5 days required for digging to the surface of the beach. Upon emergence to the beach surface the hatchlings scramble down the beach to the sea, pursued by predatory birds, ghost crabs etc. It is thought that the survivors swim out to the open ocean feeding on macroplankton, but nobody knows for sure where they actually remain during their first year of life, which is consequently called the "lost year". The young sea turtle then returns to relatively shallow coastal waters and begins its normal adult feeding habits.



Five of the seven species of sea turtles occur circumglobally in tropical and sub-tropical seas. Over this extensive distributional range they show little morphological variation. The two remaining species have a restricted distribution.

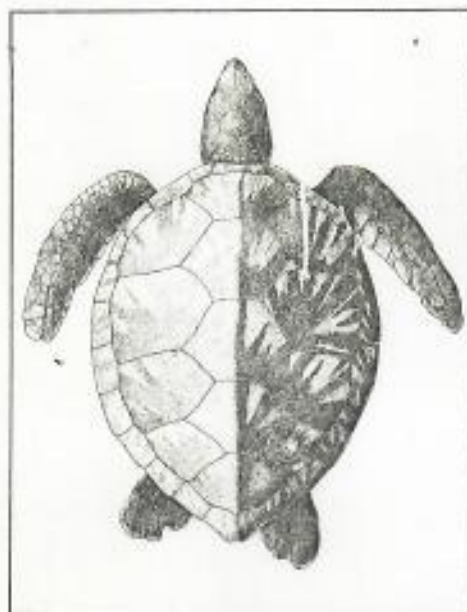
The Flatback sea turtle, *Chelonia depressa*, is found mainly off the North coast of Australia. It is generally smaller and lays a fewer number of eggs than the Green sea turtle, but the egg size is greater, producing larger hatchlings.



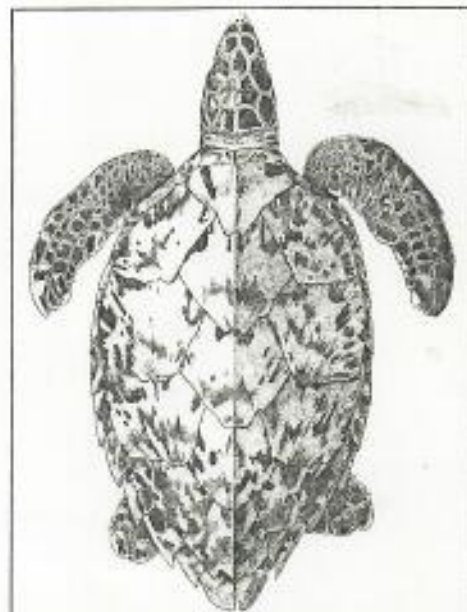
Flatback

Atlantic ridley

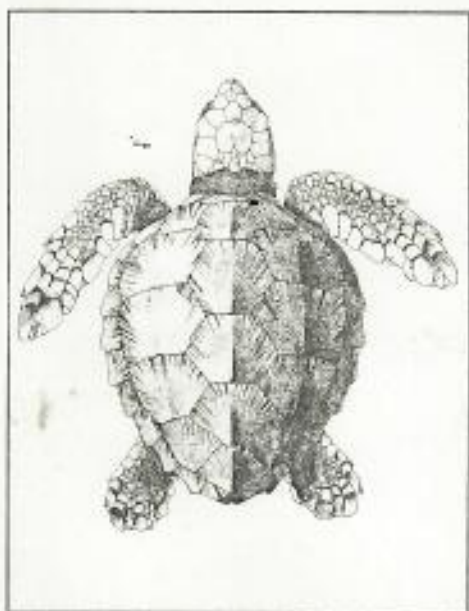
The Atlantic ridley, *Lepidochelys kempii*, is known to be an extremely vulnerable species because its entire breeding range appears to be restricted to a section of almost uninhabited coast of the State of Tamaulipas, Mexico. Kemp's ridley is the only sea turtle which nests primarily during day light.



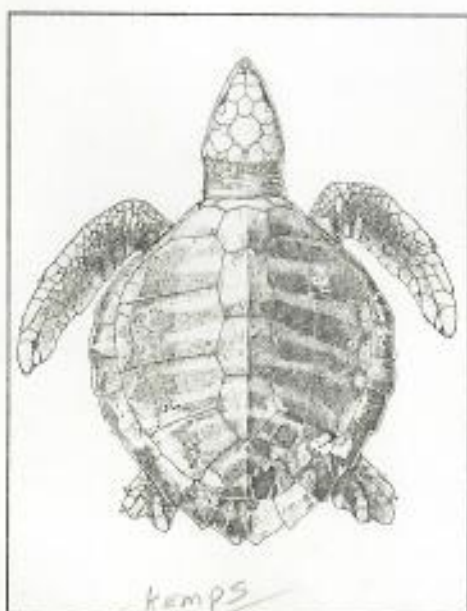
The Green sea turtle, *Chelonia mydas*, occurs in shallow coastal waters and feeds primarily on sea grasses and algae. This turtle has been reported to weigh as much as 800 lbs, however, today 350-400 lb animals would be considered large.



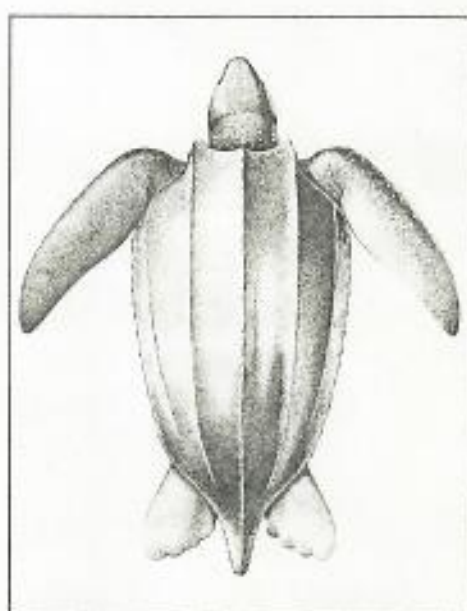
The Hawksbill sea turtle, *Eretmochelys imbricata*, is relatively small weighing, usually less than 150 lbs. It is generally an inhabitant of coral reefs where, using its modified "beak" in cracks and crevices, it feeds on sponges and soft corals.



The Loggerhead sea turtle, *Caretta caretta*, feeds mainly on shellfish but also eats fish, sponges, and jellyfish. The Loggerhead rarely exceeds 350 lbs but very large examples have been reported weighing over 800 lbs.



The Pacific ridley, *Lepidochelys olivacea*, is the smallest of the sea turtles weighing between 100-120 lbs as adults. It feeds primarily on invertebrates such as crabs, shrimp, and snails. The ridleys tend to nest in large aggregations with several thousand females nesting during a 2-3 day period on a single nesting beach.

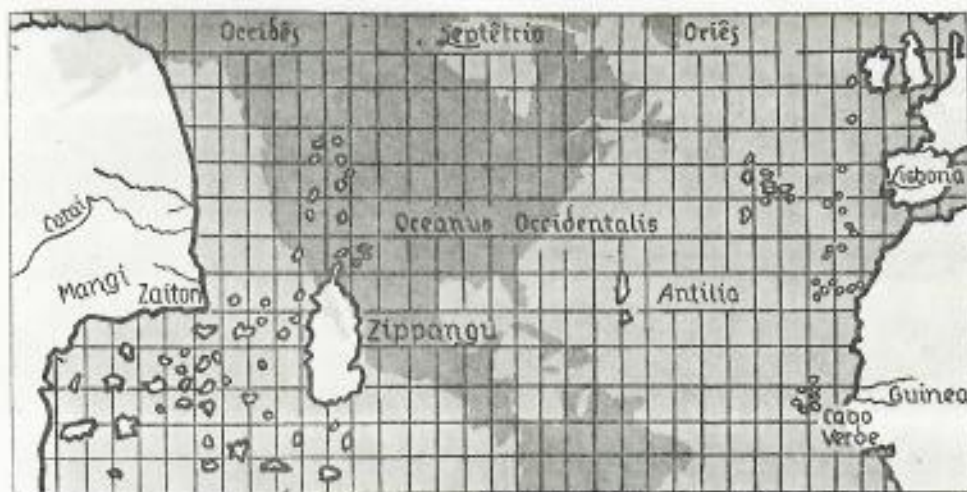


The Leatherback sea turtle, *Dermochelys coriacea*, is the largest of all the sea turtles weighing an average 600-800 lbs but with individuals reported weighing over 2,000 lbs. The leather-like shell of the Leatherback is not a solid bony shield as in the other sea turtles and is more streamlined with 7 pronounced ridges running the length of the carapace. The Leatherback lives a pelagic or open ocean existence feeding almost exclusively on jellyfish. This species is capable of limited thermoregulation and consequently is frequently found



Returning from his fourth and last voyage in May 1503, on the way from Panama to Hispaniola, Christopher Columbus sailed between Cayman Brac and Little Cayman. According to the journal kept by his son Ferdinand Columbus, "we were in sight of two very small and low islands, full of tortoises, as was all the sea about, insomuch that they looked like little rocks, for which reason those islands were called 'Tortugas'". Initially the Cayman Islands were used solely as a provisioning ground for sailing ships with turtles being taken in large numbers and shipped alive as a source of fresh meat. As permanent settlements developed early in the XVIII century turtling became a means of supplementary income as well as a local source of food. At first the local turtle population sufficed for the Islands' needs, but as the sea turtle became depleted in Cayman waters the fishery moved to the South coast of Cuba in the Isle of Pines region. Around 1850 the center of the turtling industries was the Misquito Cays off the coast of Nicaragua.

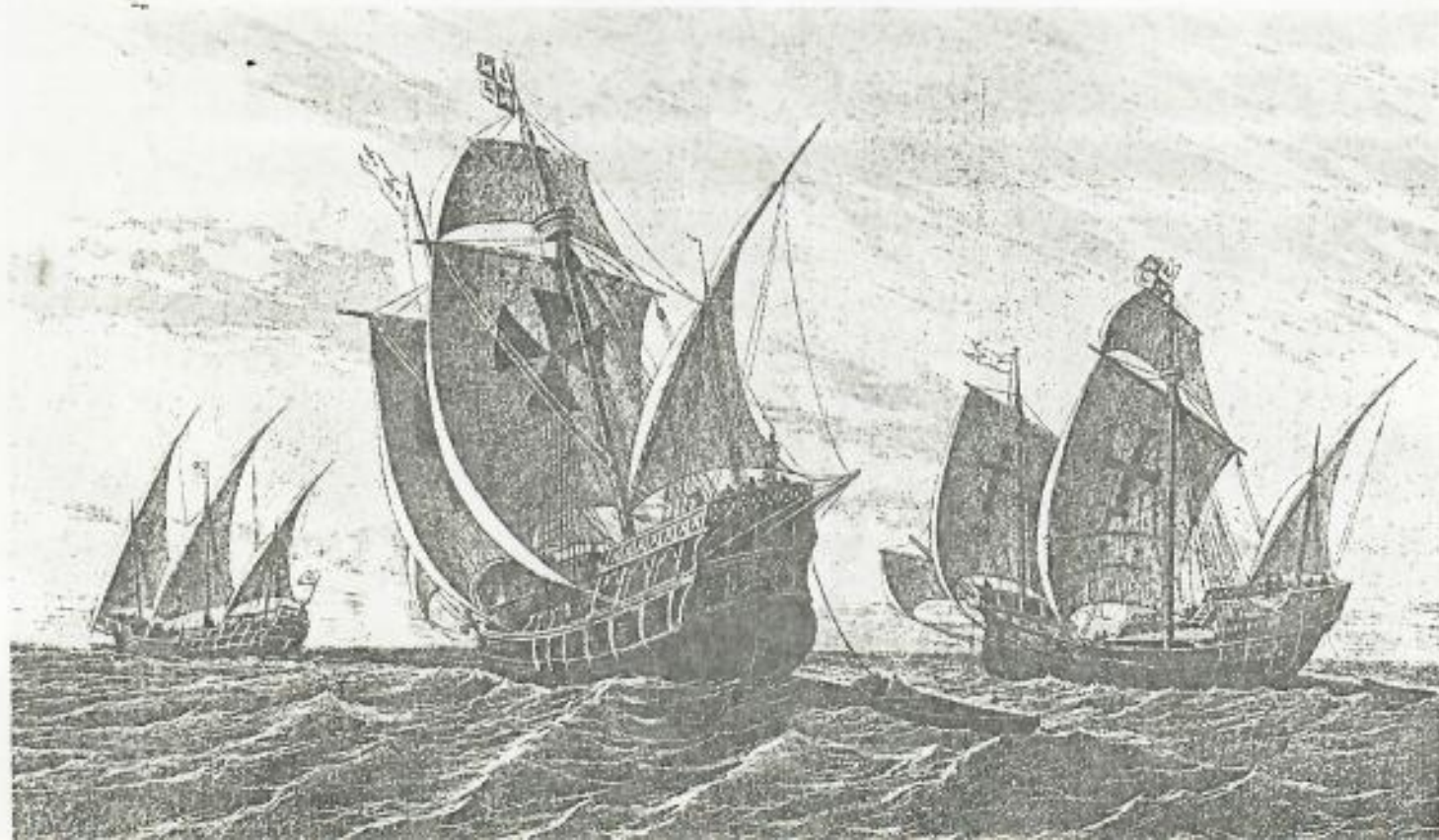
The peak of the commercial Caymanian turtle fishery was around the turn of this century with approximately 25 vessels



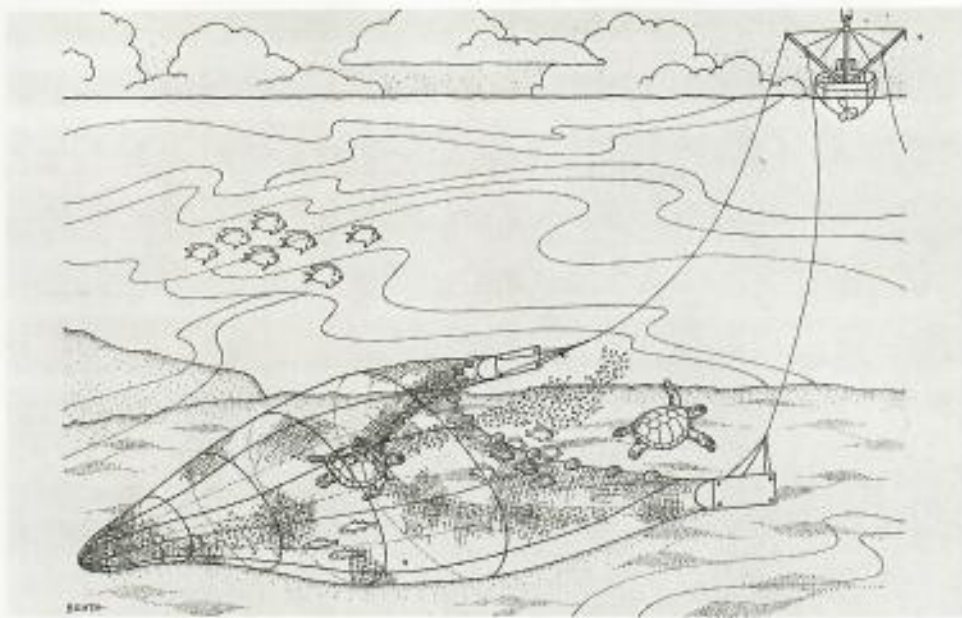
ranging from 25 to 100 tons being involved. Between January to March and July to September these boats would sail from Cayman to the Misquito Cays. Turtles were caught using tangle nets situated over rocks which were sleeping areas for the turtle. Wooden decoys were also occasionally used to entice the males into the nets. Turtles were accumulated in crawls and then transported to the Caymans, Jamaica, or Florida. The close association of the sea turtle with the Cayman Islands is attested to by the appearance of a sea turtle on the Cayman flag, the national seal, and the national airline.

△ World map by the scholar Toscanelli, Florence, who encouraged Columbus to sail west. In a letter dated 25th June 1474, addressing the priest Ferdinand Martinez in Lisbon, Toscanelli wrote about a shorter westward way to the Spice Islands. Note: Zippangu - Japan, Mangi - India. The darker areas in the center are added to show the position of the American continent, which was later discovered.

▽ The legendary fleet of caravels on which Columbus sailed to America.



STATUS OF MARINE TURTLE POPULATIONS



Sea turtle populations have declined during the last 200 years. This decline is attributed to man's activities such as: over exploitation, incidental catch, alteration of habitat and/or pollution.

Over Exploitation.

As the turtle is totally defenseless on land, it is easy to take the females on the nesting beaches. The tendency of sea turtles to nest in large numbers in a relatively confined section of coastline has made them particularly susceptible to this type of exploitation, which severely compromises the reproduction rate.



Carcass of ridley turtle killed for skin and eggs by poachers on the beach.

Incidental Catch.

Large numbers of sea turtles are killed each year by becoming trapped in shrimp trawls and fishing nets and, because they cannot come up to the surface to breathe, they drown. For such species as the Loggerhead and the Atlantic ridley this probably represents the major source of danger to the species.

Pollution.

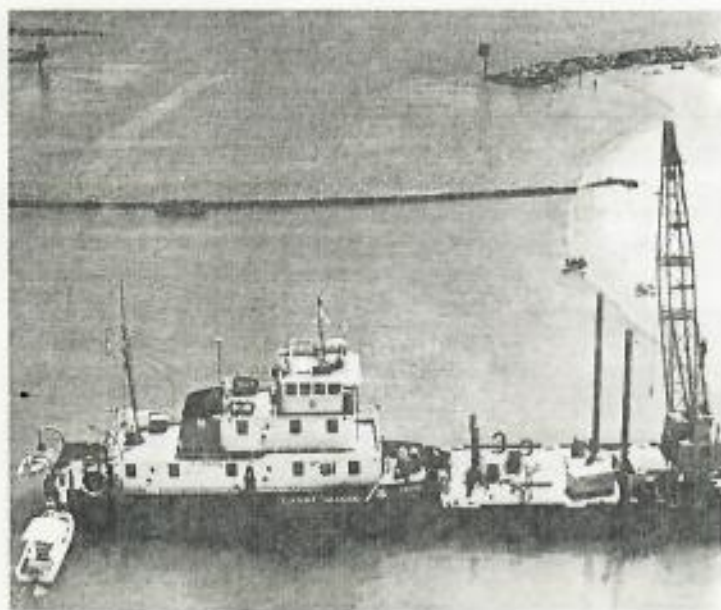
In recent years many turtles have been reported killed by pollution. One major source of mortality is the ingestion of plastic bags by sea turtles. Such bags apparently appear as jellyfish to the turtle. Hatchlings have also been reported washed ashore with tar balls in their mouths and stomachs. In 1979, the oil spill in the Gulf of Mexico threatened the nesting beach of the Atlantic ridley and other wildlife. Pictured is a Coast Guard vessel standing watch over a boom placed in the Port Mansfield Cut in an effort to keep the oil spill from entering the channel which leads into the Laguna Atascosa National Wildlife Refuge.

Alteration of Habitat.

As world population increases and countries develop their coasts, it is inevitable that beaches once used for nesting become populated with hotels and condominiums. In general, sea turtles will avoid such populated areas. If nests are laid in such areas the hatchlings upon emergence will often be attracted to local sources of light such as street lights and lights of passing cars. Being confused, they will never find their way into the sea.



In order to protect the Atlantic ridley, 8,300 hatchlings were flown to safety at Rancho Nuevo Beach, Northern Mexico, in August 1979.



Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction

Species of Mammals, B.C., in 1980

ARTICLE I
 Les Parties contractantes conviennent de prendre les mesures nécessaires pour assurer la conservation de la faune et de la flore sauvages menacées d'extinction, en vue d'éviter l'éventuelle disparition de ces espèces et de permettre la jouissance durable de leur diversité biologique.

ARTICLE II
 Les Parties contractantes conviennent de réglementer le commerce international des espèces de faune et de flore sauvages menacées d'extinction, en vue d'éviter l'éventuelle disparition de ces espèces et de permettre la jouissance durable de leur diversité biologique.

ARTICLE III
 Les Parties contractantes conviennent de réglementer le commerce international des espèces de faune et de flore sauvages menacées d'extinction, en vue d'éviter l'éventuelle disparition de ces espèces et de permettre la jouissance durable de leur diversité biologique.

△ Trade in farmed species is permitted, subject to appropriate documentation, under the Convention on International Trade in

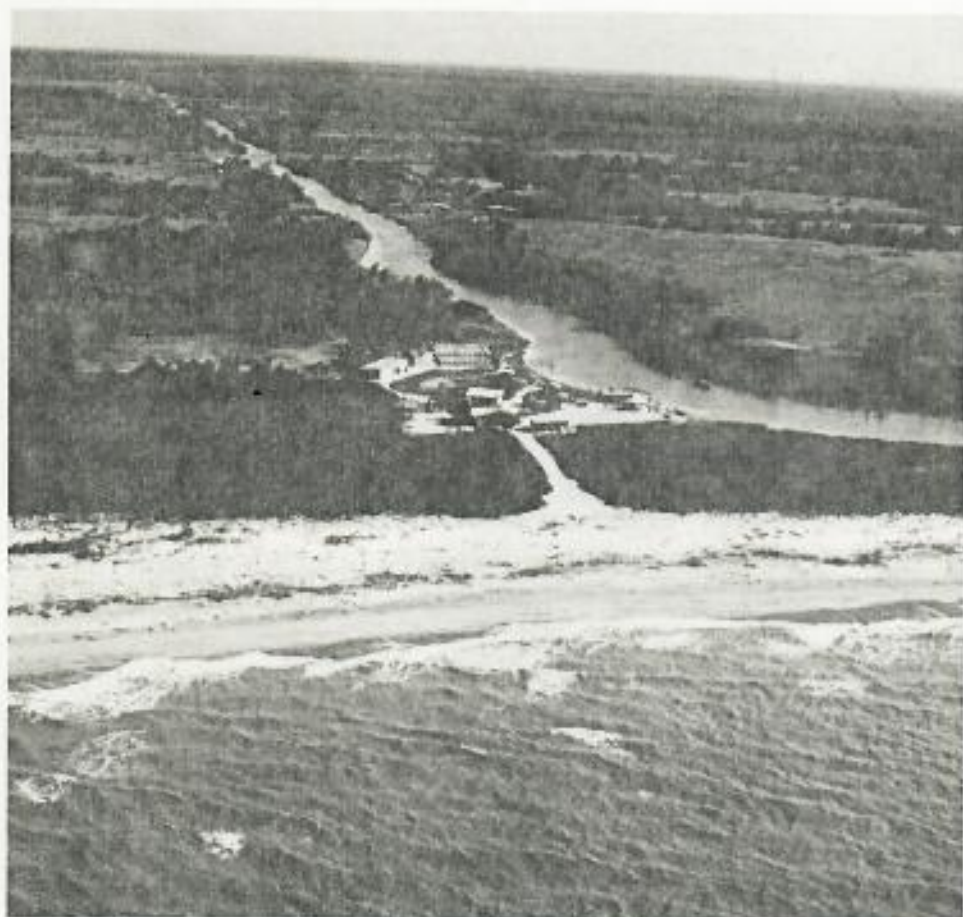
Endangered Species of Wild Fauna and Flora.

▽ Ranching project site at Matapica Channel.

Much has been accomplished in controlling international trade of wild products with efforts continuing to bring all nations into the agreements. Some countries have allowed the taking of turtles for local subsistence in those areas where there is a strong cultural heritage of such use. In general, however, all sea turtle species are now protected by international treaty and domestic legislation.

Most natural mortality occurs during the egg and hatchling stage. It is estimated that in marine turtles only 1-2 out of every 1000 eggs laid survive to maturity. Therefore, protection of nesting beaches from both man and natural predators has been organized by conservationists in various countries. Other measures are the so-called headstart programs which generally consist of raising hatchlings for a few days or a few months and then releasing them to the sea.

The underlying idea is to decrease natural predation by having the hatchlings larger and hopefully more capable of avoiding capture. Other countries have chosen to form preserves; the Australian green sea turtle population at the Great Barrier Reef enjoys such protection.



These traditional conservation measures have not yet been proven generally effective in reversing the decline of sea turtle populations. Other alternative measures should be explored. The most logical answer would be to develop concepts rendering the sea turtle a renewable resource. Ranching and farming are such concepts. The main difference between sea turtle farming and sea turtle ranching is that ranching operations rely upon either eggs or hatchlings from the wild, whereas farming operations produce their own stock from a captive breeding herd. Of the four species of sea turtles nesting on Suriname beaches, the green turtle alone lays about one million eggs each year. A quarter of these eggs would be destroyed by spring tides, if left unattended. Since more than 10 years, most of these "doomed eggs" are harvested and sold under close supervision to local markets. This has reduced egg poaching to almost nil. Proceeds of the egg sales are used to finance conservation work in Suriname on all marine turtles nesting there. The Matapica turtle ranching project is an extension of the earlier conservation efforts in Suriname. It includes a headstart program: Each year a certain number of turtles of different age groups will be marked and released to the sea, thus providing a contribution to the Suriname population of green sea turtles.



◁ Henry A. Reichert, Director of the Foundation for Nature Preservation in Suriname, with the Matapica team, examining a lively yearling turtle.

◁◁ Suriname, the former Dutch Guyana, is an independent republic since 1975. (Map: National Geographic).

Chelonia mydas, "a remarkable animal, indeed, but not one easy to study in detail. Mating takes place at sea, the male rarely leaves the water, the female comes ashore only to nest and the hatchlings rush for the water as soon as they leave the nest. In these circumstances, we are ignorant of many basic facts of the life history of *Chelonia*. We do not know where the hatchlings spend their first year, the age at sexual maturity, whether the male is fertile throughout the year, the length of reproductive life or how long individuals live. Until a few years ago, our knowledge of reproduction in wild *Chelonia* was limited to what could be obtained from tagging females on nesting beaches and observing the frequency of nesting and the nature and contents of the nests. In this area, the paper by HENDRICKSON (1958) on the Sarawak turtles and the review by HIRTH (1971) are outstanding, but tribute must also be paid to the pioneer of MOORHOUSE (1933), one of the few biologists to make use of the material available from turtles slaughtered at soup factories. More

general accounts of *Chelonia* have been given by CARR (1968) in his classic book 'The Turtle', and by BUSTARD (1972), PRITCHARD (1967) and REBEL (1974). Recently, however, more detailed information has become available from the captive breeding of *Chelonia* on a land-based "farm" on Grand Cayman Island, British West Indies." Sir Alan Parkes, 1981

The breeding facilities of Cayman Turtle Farm offer a unique opportunity for the study of green turtle reproductive biology, providing detailed information which simply cannot be obtained in the wild. During the past 10 years management techniques have been developed which encourage the natural process. Since 1975 a 24-hour watch has been maintained on the breeding ponds so that data associated with mating and nesting can be recorded on an individual turtle basis. Studies are underway on the hormonal aspects of mating and nesting. Preliminary work is now being done on semen collection and artificial insemination.



△ Professor Archib CARR, Ph. D., (penn) and other scientists watch a nesting green turtle on a Costa Rican beach. (Photograph by R. E. Schroeder, Ph. D.)

▽ Dr. J. WOOD performing a laparoscopic investigation of the reproductive organs as an initial stage in artificial insemination.



△ Prof. J. HENDRICKSON, University Tucson/Arizona, developed a new method for marking turtles by tissue modification. The white spots on the carapace are grafts from the whitish bottom shell.

▽ Dr. S. SOLOMON studied the ultrastructural details of the turtle's reproductive system.

REVISING HISTORICAL RECORDS IN MARINE MAMMALS

H. E. HILLIS, JR. and R. S. BERRY
 Department of Biology, University of Florida, Gaines, FL 32611-0700
 Florida State University, Tallahassee, Florida 32306-0700

Abstract: The historical records of marine mammals are reviewed and revised. The records are presented in a tabular format, and the authors discuss the reliability of the records and the need for further research.

Keywords: Marine mammals, historical records, taxonomy, distribution.

Quantitative Requirement of the Hatched Green Sea Turtle, *Chelonia mydas*, for Volcanic Seaweed, *Sargassum muticum*

LEON E. SPRENGER and JAMES H. WOOD
 Department of Biology, University of Florida, Gaines, FL 32611-0700

Abstract: Hatched green sea turtles fed on a diet of *Sargassum muticum* in a laboratory setting. The authors report on the quantitative requirements of the turtles for this seaweed, including the amount of seaweed needed to maintain the turtles in good health and the effects of different feeding regimes.

Keywords: *Chelonia mydas*, *Sargassum muticum*, feeding requirements, laboratory study.

The central aim of this study was to determine the quantitative requirements of hatched green sea turtles for *Sargassum muticum*. The authors conducted a series of experiments in which the turtles were fed different amounts of seaweed and their health and growth were monitored. The results showed that the turtles required a certain amount of seaweed to maintain their health and that the amount of seaweed needed increased with the size of the turtles.

References: A list of references cited in the paper, including works by other researchers on marine mammals and turtle biology.

Reproductive Biology of Captive Green Sea Turtles (*Chelonia mydas*)

JOHN E. WOOD and JOHN E. WOOD
 Department of Biology, University of Florida, Gaines, FL 32611-0700

Abstract: A detailed study of the reproductive biology of captive green sea turtles is presented. The authors describe the mating process, egg development, and the care of the hatchlings in a captive environment.

Keywords: *Chelonia mydas*, captive breeding, reproductive biology, mating, egg development.

EGGS ON THE COCA PINEA PINEA AND CYPRIPEDIA OF CHLONIA MYDAS

JOHN E. WOOD and JOHN E. WOOD
 Department of Biology, University of Florida, Gaines, FL 32611-0700

Abstract: The authors report on the presence of eggs of *Chlonia mydas* on the plants *Coccoloba pinea* and *Cyrtopodia*. The study involves the collection and analysis of these eggs to determine their viability and the conditions under which they were laid.

Keywords: *Chlonia mydas*, eggs, *Coccoloba pinea*, *Cyrtopodia*, plant life.

Category	Value
Number of eggs	100
Percentage of viable eggs	75
Number of hatchlings	75
Survival rate of hatchlings	60
Number of surviving hatchlings	45

References: A list of references cited in the paper, including works on turtle reproduction and plant biology.

HOW IT STARTED ON GRAND CAYMAN ISLAND

The first efforts to farm the green sea turtle were made over seventy years ago but with no success. In 1968, Mariculture Ltd., the predecessor of Cayman Turtle Farm, started a farm here on Grand Cayman. The farm initially consisted of numerous floating tanks located in a tidal creek in North Sound. These facilities were used as a prototype operation for about two years. It was a step necessary to justify the substantial expense incurred in acquiring the Goat Rock property and improving it. The land-based tanks and breeding ponds are representative of a capital-intensive farming system offering more control over stock than the simpler labour intensive farming systems. Sea turtle culture was at first a trial and error process since very little was known of

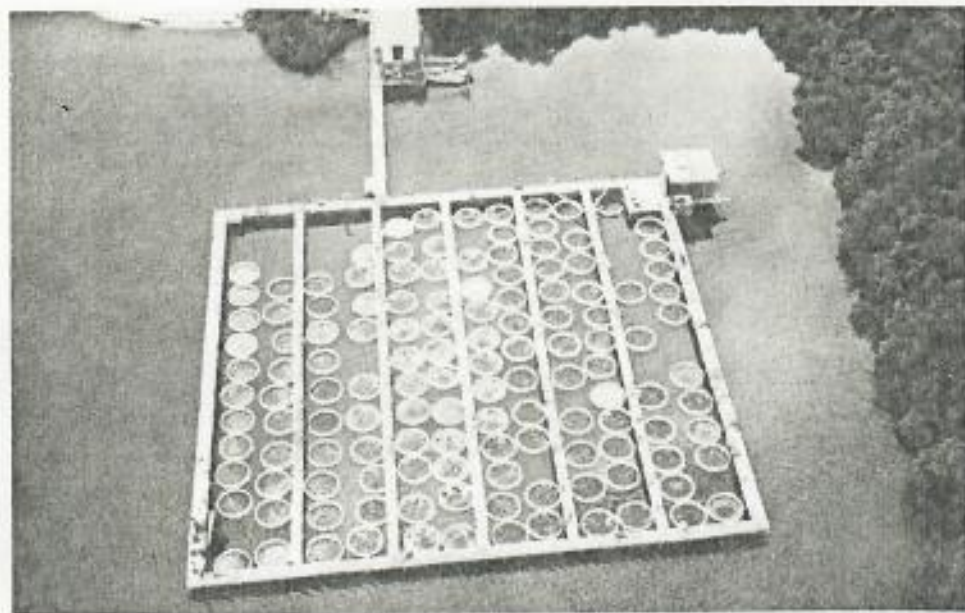
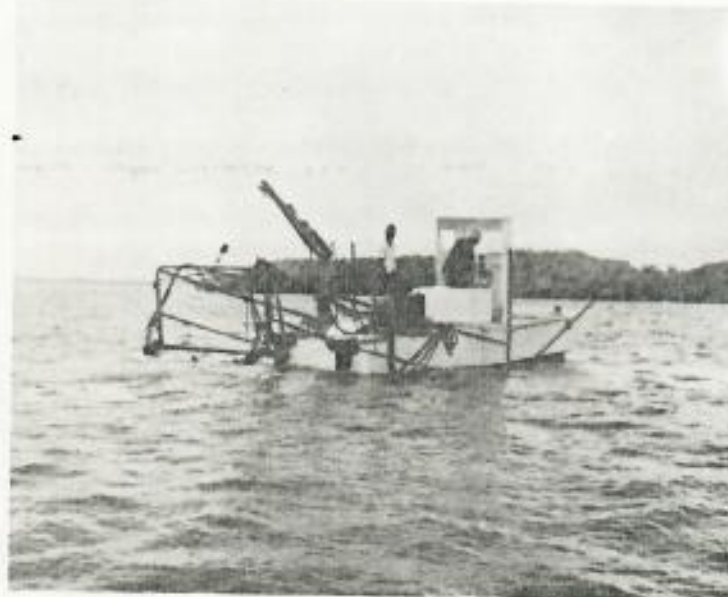
the sea turtle in the wild. One of the first steps taken by the farm was to acquire from various countries wild adult animals to be the nucleus of our breeding herd. Rations were formulated which provided relatively efficient and rapid growth. Various husbandry techniques were learned dealing with reproduction, feeding, tank density, hygiene and disease control.

▽ Aerial view of the completed Salt Creek facility 1969/70.



△ The first hatchling pens.

▷ Turtle grass cutting device: A horizontal bar mower which was raised and lowered hydraulically. After cutting the dead grass sank, while the live grass rose to the surface. After 24 hours or so the live grass would "wind-rows" itself, making collecting of the grass relatively easy on an endless conveyor mounted on a barge. Unfortunately, it was discovered that the cost to feed this grass correlated with protein derived from it was much more expensive than to feed the turtles pellets, the size and protein content of which could be controlled.



▷ The first prototype for a "round" tank.

▷ The first "growing" pens into which the hatchlings were put when they were about six months old.

▷ The fiber glass pens eventually used.



STATE OF THE ART IN THE FIELD

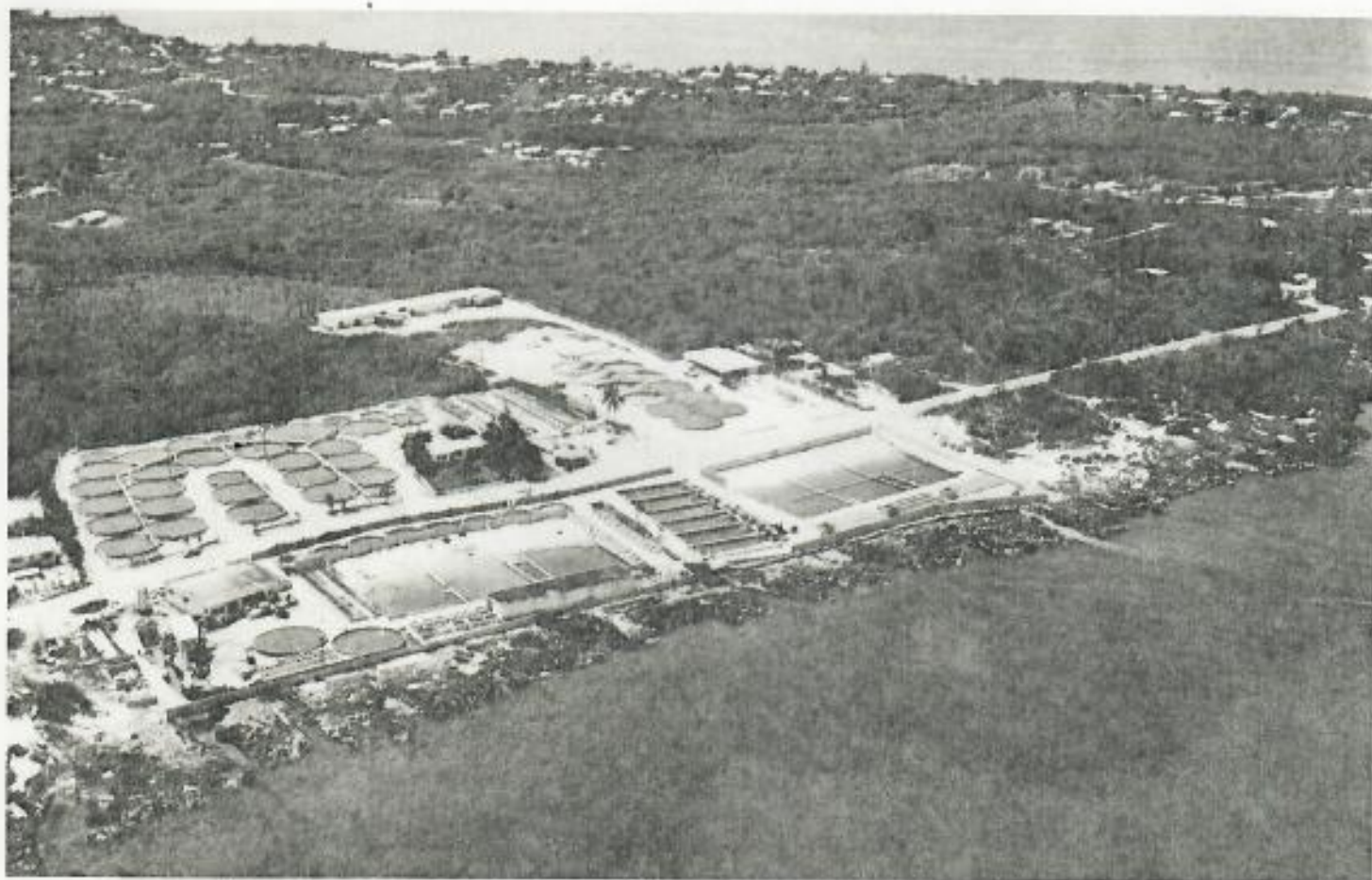
The green sea turtle had not previously reproduced successfully in captivity. Some experts even held the opinion that this would never happen. But in 1973 the first of the captive wild stock females nested on the artificial beach of Cayman Turtle Farm laying fertile eggs. The number of nesting females in this group has increased from 19 females in 1973 to 63 females in 1980. Another breakthrough came in 1975 when a female hatched from a wild egg and raised its entire life on the farm nested with the production of hatchlings. The ability to maintain and reproduce the sea turtle in captivity is obviously the greatest achievement of turtle farming. Such ability need not be utilised solely for product production. Essentially the same techniques can be used by operations whose sole purpose is the production of animals for restocking the natural populations. Cayman

Turtle Farm is an example of a unit serving both functions, and is actively engaged in an attempt to repopulate Cayman waters with Green Sea Turtles.

The research necessary for development of farming techniques often provides information on the basic biology of the species which is useful in evaluating wild populations. For example, data on the reproductive potential of the sea turtle in captivity and age of sexual maturity could be of use in wild population studies. One additional benefit which could be assigned to turtle farms is that by the very nature of their operations relatively large numbers of turtles exist in a controlled and confined environment. Should conservation measures to protect the sea turtle in the wild fail, stock held by farms would represent the only remaining genetic pool from which animals could potentially be replaced.

The annual egg production per female in three turtle populations can be calculated as follows:

Costa Rica	110 eggs per nest x 2.8 nests per season ÷ 3.19 season interval = 96.6 eggs per female per year.
Surinam	142 eggs per nest x 3.8 nests per season ÷ 2.33 season interval = 231.6 eggs per female per year.
Cayman CWS <i>captive</i> <i>wild</i> <i>stock</i>	117 eggs per nest x 5.9 nests per season ÷ 1.40 season interval = 493.1 eggs per female per year.



△ Cayman Turtle Farm
1980

▷ Turtle hatching from egg

▷▷ 3 year-old turtle

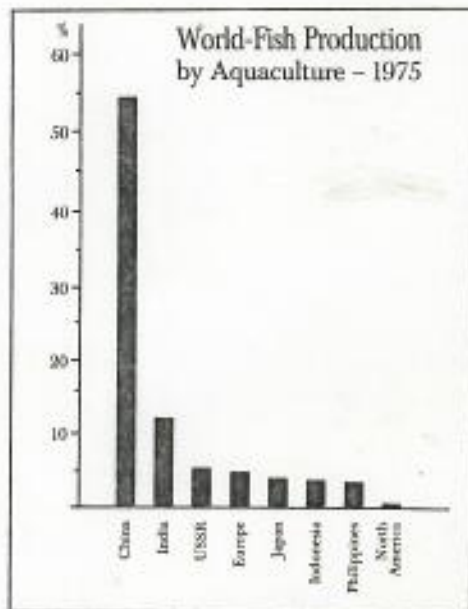


"Give a man fish and he has food for one day. Show him how to keep fish and he will be fed for the rest of his life." *Chinese proverb*

Aquaculture is the controlled production and developed method of reproduction, raising and keeping of water organisms. The procedures include a much higher density of population of those organisms as compared to the wild. The organisms grow in controlled environment, f.i. in ponds, creeks or man-made enclosures. True aquaculture is the equivalent of breeding cattle, sheep, mink etc. in captivity. Acquisition of the know-how to domesticate animals is one of the ways man subdues the earth.

World-wide the production from aquaculture until recently was only marginal, but now it gains momentum with the intention of meeting the protein requirements of the world. This has grown to be a problem due

tion; supplying highly valuable products earns foreign exchange. Aquaculture can be an excellent complement to agriculture, since large areas of unutilized lagoons and mangrove swamps are available in developing countries, and existing agricultural irrigation systems can be profitably used. A combination of land animal husbandry and fish farming can increase the production of fish in ponds, since the animal manure can be used as an organic fertilizer. The labour intensive nature of aquaculture can provide additional opportunities for employment in rural areas.



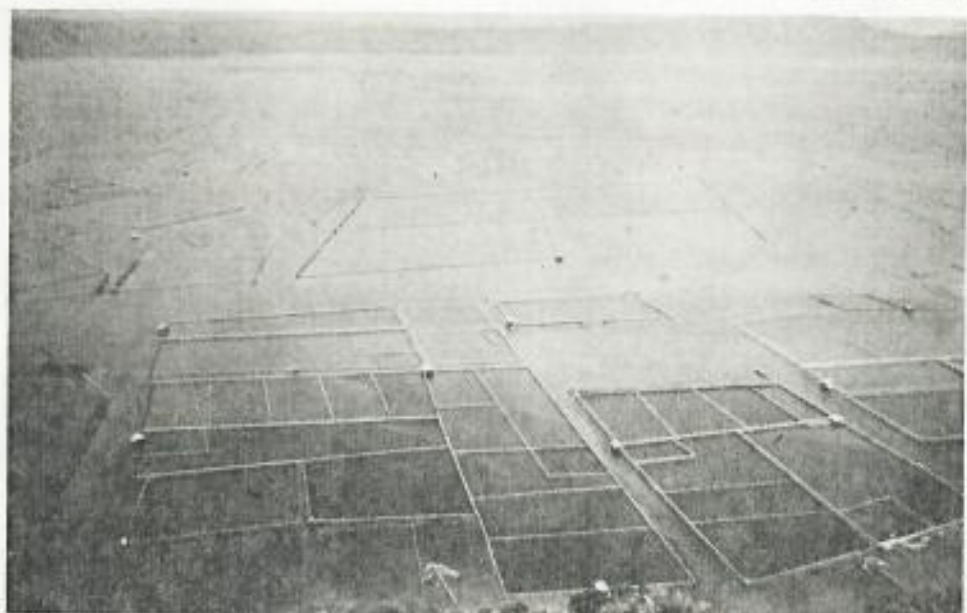
∇ *The Tangshan Kelp Farm, Lioryn, Port, China*

▷ *Fish farming near Manila/Philippines*



▷ *Milk Fish Pen Culture, Laguna de Bay, Philippines*

to the depletion of sea-fish populations and the change of ecological conditions in waters - water pollution, regulations of rivers etc. Today, the populations of sea-fish species high in demand are overfished to such an extent that quotas must be set for the catch. This depletion of the natural fish resources of the sea is interfered by rising catch and processing expenses as a result of the increase of energy costs and by the reform of the international maritime laws. Compared to those limitations, aquaculture as a means of food production offers a potential by no means yet exhausted. It opens a wide spectrum of opportunities: As an element of rural development it can help to increase the living standard of the popula-



The green sea turtle has been termed the most valuable among the seven sea turtle species. For hundreds of years there has been a demand for its meat, leather, shell, oil and the gelatinous calipee and calipash used in turtle soup. It is the intention of sea turtle farming to provide these markets with products which are not derived from wild populations.

The farming of the green sea turtle can play an important rôle in the development of tropical and semi tropical economies and coastal plains, especially where a tradition of turtle exploitation for human consumption or craft industries exists. Through farming, this rôle can be undertaken without in any way depleting wild stocks and it is likely - in fact - that the regular availability of a farmed product will render poaching and allied means of satisfying the demand for turtle products uneconomic

and redundant. In the current debate between North and South on the best means of negating underdevelopment, the United States, in particular, has expressed a preference for the promotion of development through trade rather than through the simple granting of aid. The contemporary view is that the developing countries should strive to build their industries on a technological foundation and not simply rely on the exploitation of local climatic or labour conditions. The concept of development through trade goes hand in hand with that of development through technology. Both rest on the essential foundation of access to export markets, particularly in the developed countries of the North. The form of turtle farming practised here in Cayman, in a closed cycle environment completely removed from the wild, has resulted in the development of 'know-how'

which is not available anywhere else in the world. The spreading out of this knowledge through an expansion of the turtle farming concept, will result in primary employment and income generation in areas where the climatic conditions allow for keeping sea turtle populations and would encourage the conversion of turtle food products into a low cost, traditional food for consumption, thereby directly tackling the problems of malnutrition and underdevelopment. Secondary employment and income effects would follow from the establishment of local processing industries. These activities would be oriented both towards local and export markets, depending on the geographical location of the operation, the network of international communication open to it, and the presence or absence in its country of residence of a tourist trade.




▽ Necklace with pendants, genuine farmed turtle shell and 18 ct gold.
Design: Hans Hermann
Lingensbrink

△ Manufacturing of Farmed Turtle Shell jewelry.

▷ Farmed Turtle Products: soap, meat, leather and oil.



Jewelry and objects made from farmed turtle shell are now available with new forms which meet the taste of our times and with processing methods which enhance the silky lustre of the material. The Cayman Turtle shell with its brilliant translucency is of incomparable beauty. Its shimmering lustrous shades range from light beige to deep brown, and its exotic patterns show a variety only nature can create. Turtle-shell jewelry is sensuous, taking up the warmth of the skin and feeling good on it - natural.

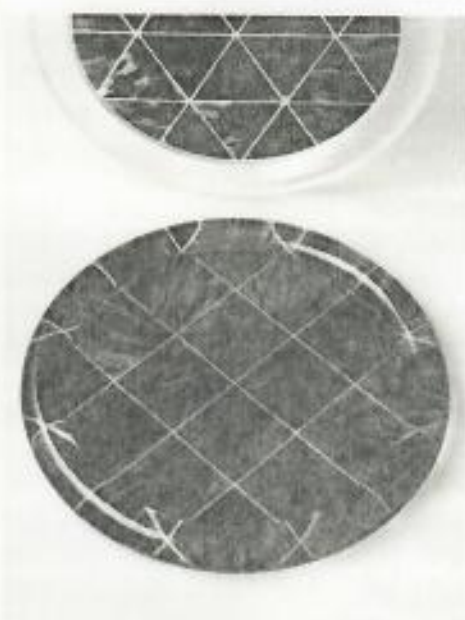
Each of the handcrafted pieces is an original, as due to the variations in the shells' natural markings no two are alike. The sign  guarantees the authenticity of the shell and its origin from farmed turtles. The Cayman turtle collections of objets d'art include jewelry, bowls, trays, boxes, coffee tables etc.



△ Pendants, necklace and brooches, genuine farmed turtle shell, Hans Hermann Lingenbrink Collection.

◁▷ Bowl, acrylic with genuine farmed turtle shell, size ϕ 41 x 8,3 cm.

◁ Tray, acrylic with genuine farmed turtle shell, size ϕ 38 cm.



◁▷ Ring and pendants, genuine farmed turtle shell and 9 ct gold, Peter Dasey Collection.

◁ Table, acrylic with genuine farmed turtle shell, size ϕ 65 x 41 cm, Roberto Cardoso Collection.





Mourning dress

Pearl shell, turtleshell, coconut shell, feathers, bark cloth, sennit
220 cm (86 3/8 inch) high
Society Islands
Collected on one of Cook's voyages (probably on the second voyage, by Surgeon Patten)
Given to Bishop Museum in 1971 by the National Museum of Ireland, Dublin
Bernice Pauahi Bishop Museum, Honolulu, 1971. 198.01

The death of a chief or another important person was the occasion for a spectacular display of grief in which an elaborate costume was worn by a priest or close relative of the high-ranking deceased. The shell-face mask is surmounted by tail feathers of tropic birds and has only one small peep-hole through which to see. The chest apron is made of thousands of tiny slips of pearl shell. The feather cloak is one of the few surviving examples of Tahitian featherwork.

△ Quotation from "The Art of the Pacific Islands" by P. Gathercole et al. National Gallery of Art, Washington 1979.

Both in Asia and in America the turtle is one of the mythical animals on which the world rests. In the Iroquois myth the world was at first covered with water. When Aataentsie fell from heaven, the animals held a conference to decide how she was to be received. The turtle caught her on his broad back and with the aid of mud or sand brought up by water fowl, the earth was formed. The turtle is an important Iroquois totem, and the tribe traces its descent from a turtle that threw off its shell. In the ancient Chinese myths, the turtle plays a similar rôle: Nu-kua, the goddess of creation, based the heavens on its four legs. In Chinese cosmology, the turtle belongs to the five sacrosanct animals, embodying the north, the water and the winter. A turtle encircled by a snake was venerated as a magic being and presented with sacrifices in the Han-period. The turtle symbolized steadfastness and immortality, a bridge to the other world.

Water turtles appear on pictures in Egyptian tombs from the 18th dynasty on, and in Assyrian reliefs. In the Hindu mythology, the turtle is considered as Vishnu's second incarnation. As the Greek ancient legends



Custom competes with protection of the hawksbill turtle. In Japan a bride's traditional hair-piece includes combs made of the sea creatures' colorful shell.

(From: National Geographic)

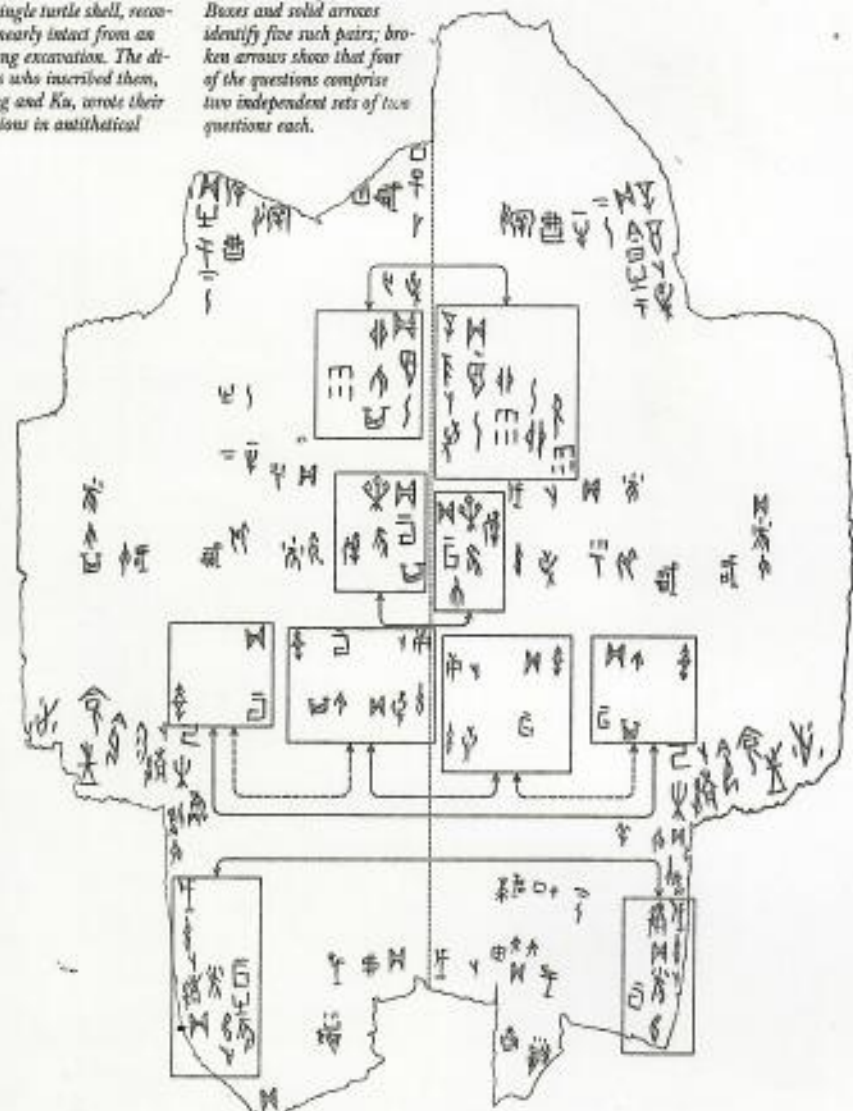
have it; Hermes built a lyre from a turtle carapace when searching for Helios' cattle; Apollo transformed himself into a turtle when courting the nymph Dryope; and Aphrodite was pictured with a turtle as a symbol of fecundity.

It is interesting to note how through the ages, the turtle always has fascinated people and stimulated their imagination. The Fondation Maeght in Saint-Paul-de-Vence, France, holds a famous contemporary interpretation of the sea turtle as a symbol of the fecundity myth: The ceramic sculpture "La Déesse", created 1963 by Joan Miró.



SCORES OF QUESTIONS were inscribed on this single turtle shell, recovered nearly intact from an Anyang excavation. The diviners who inscribed them, Chang and Ku, wrote their questions in antithetical

fashion on opposite sides of the center line of the shell. Boxes and solid arrows identify five such pairs; broken arrows show that four of the questions comprise two independent sets of two questions each.



Chinese Bone Oracle.

In the Shang dynasty 3000 years ago aristocrats liked to seek the advice of their ancestors. The questions, engraved on turtle-shell or on bone, are clues to the origins of Chinese civilization. In the preparation of "oracle bones" the plastron (bottom shell) of a turtle was performed in a special way, so that subsequent heating would form cracks on the surface of the material. After the oracle bone had been prepared the diviner engraved his questions on its smoothed surface, exposed the shell to heat and judged from the cracks that appeared whether the oracular answers to his questions were favourable or otherwise.

The first coin in history.

The Greek island of Aigina is situated in the gulf between Athens and Epidaurus, where many ships come in from all over the Mediterranean Sea. Legend has it, that the daughter of the river god Asopos gave birth to a son of Zeus on this island, which subsequently was named after her. Due to its geographic position and to the business acumen of its inhabitants, Aigina developed into a powerful community; a trade center relating orient and occident. When barter deals were not feasible, precious metals were used by weight to pay for the merchandise. In the 7th century B.C., however, coins were "invented" on the island of Aigina. The coin shown here is the eldest known, the so-called "Stater"; solid silver in the shape of a sea turtle.

More than 2000 years ago, this coin was issued on the Island of Aigina, Greece.



ORACLE-BONE INSCRIPTION in the photograph on the opposite page is one of several engraved on the shoulder blade of a sheep. It is specimen No. 374 in the Coolidge-Chalfant collection of Shang oracle bones at the Carnegie Institute Museum in Pittsburgh. The sheep bone was unearthed in the vicinity of Anyang, the last Shang capital. The Chinese writing is in the staple style characteristic of the later Shang dynasty. The divination took place on the 34th day. The paired inquiries are: On the 37th day, will it rain? On the 37th day, will it not rain?



The first pieces of jewelry and objects for everyday use made from tortoise-shell appeared in ancient times. The Roman emperors especially developed a preference for this singular exotic material and had bowls, door-posts, furniture and - like Clodius Albinus - even bathtubs inlaid with it. Also cradles were made from tortoise-shell as it was supposed to protect the babies from illness. During the Renaissance, the art of intarsia became even more refined and very fashionable in Europe. Since 1570, the Dutch and the Portuguese imported tortoise-shell.

The inventory of the French Cardinal Mazarin, compiled in 1653, includes "cabinets d'écaille de tortue avec filets d'ivoire". However, plenty of such furniture existed previously in Germany and even earlier in Italy. André Charles Boulle is known as the master of tortoise-shell inlay, having been first to use large pieces of this material in combination with brass and pewter. Boulle lived 1642-1732 in Paris and, as a highly skilled cabinet-maker worked for the court of Louis XIV. In the times to follow, snuff-boxes, pocket-watches, trays and many

other objects were most artistically decorated with inlay from tortoise-shell, sometimes along with mother-of-pearl or ivory. In addition, charming jewelry was created from tortoise-shell. By the famous Piquée technique, gold and silver parts were applied. Those combs, hair-pins and other fashionable accessories could still be found in many homes at the beginning of this century. It is enviable, that in those times, so many things for daily use were beautifully elaborate, reflecting a refined taste and a distinct quality of life.

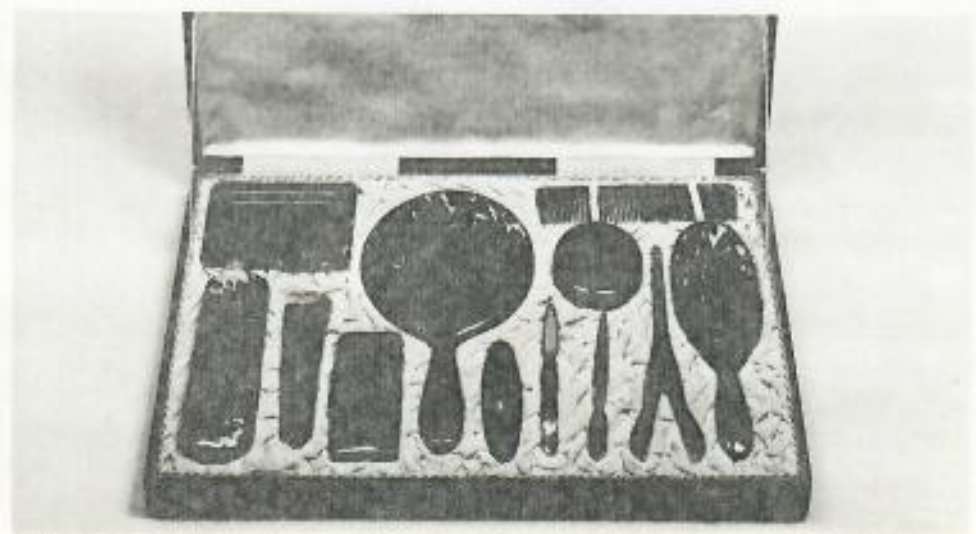


△ Tortoise shell objects, England, 18th and 19th century.

▷▷ Mirror, tortoise shell and silver, Holland, 18th century, front and backside.

▷ Manicure set, England, 19th century.

▽ Detail of necklace, mother-of-pearl inlay.



▽ Column-shaped table clock by David Bachmann, Augsburg, 2nd half of the 17th century. Silver and bronze, partly gilded, tortoise shell and wood. Height 75 cm. (Kunsthistorisches Museum Wien).



~ Clock, with lozish ornaments, by Joseph Anton Schauer, Augsburg, about 1700. Wood, tortoise shell, silver, brass and iron. Height 120 cm. (Württembergisches Landesmuseum Stuttgart).

△ Cabinet by Andre Charles Boulle, Paris, about 1700.

▷ Clock by Jacques Thuret, Paris, about 1700, case allegedly built by A.C. Boulle, Oak, tortoise shell, gilded bronze. Height 220 cm. (The Metropolitan Museum of Art, New York, Roger's Fund 1958).



UNION INTERNATIONALE POUR LA CONSERVATION DE LA NATURE ET DE SES RESSOURCES
INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES

Avenue du Mont-Blanc
1196 Gland - Suisse/Switzerland

Télex/Telrex: 22018 iucn
TEL/Tel: (022) 64 71 81

Télégrammes/Telegrams:
IUCNATURE GLAND

Référence/Reference:

SSC/RFS/pc
Sa/3/4-4

Mr. G.S. de Silva
East Coast National Parks
Regional Office
Turtle Islands National Park
Box 768
Sandakan
Sabah
Malaysia

12 March 1982

Dear Stanley,


Thanks for yours of 19 February.

The idea of setting up a discussion on sea turtle conservation during the Bali World Parks Congress, which would then involve participants from Sabah, Philippines and Indonesia, is very appropriate. I have discussed it with Jeff McNeely, who is coordinating the Bali meeting, and we have agreed tentatively that he will set aside the evening of Tuesday 12 October 1982 (and perhaps a later follow-up) for that purpose. He will send necessary letters after our SSC Steering Committee meets next week. Do you have specific names to suggest?

It may well be that Archie Carr and perhaps others interested will also be in Bali and able to participate.

We will keep you informed.

Sincerely yours,



Robert F. Scott
Executive Officer
Species Survival Commission

cc: J.B. Alvarez
N. de Celis
E. Gomez
A. Carr
F.W. King
J. McNeely

3-1908
(June 1975)



U. S. Fish and Wildlife Service
INTER-OFFICE TRANSMITTAL

INSTRUCTIONS: Attach securely to material to be transmitted & mail through regular channels

To:	<input type="checkbox"/> Director, _____	<input type="checkbox"/> Regular Mail
	<input type="checkbox"/> Regional Director, _____	<input type="checkbox"/> Air Mail
	<input type="checkbox"/> Project Leader, _____	<input type="checkbox"/> Action
	<input checked="" type="checkbox"/> <i>George Balazs - NMFS</i>	<input checked="" type="checkbox"/> Information

From	Office	Date
<i>Jim Wright</i>	<i>FWS - LE</i>	<i>8/30/82</i>

Subject *George - Jim ran into this in the files & thought you might be interested it.*
Jim

INSPECTOR GORA:

4/4/74

ORIGIN

ATTACHED IS ORIGINAL CERTIFICATE OF ORIGIN, COPY OF SPECIAL CUSTOMS INVOICE AND COPY OF EX 3-177, FOR SHIPMENT OF TURTLE MEAT ARRIVED 3/12/74. PLEASE FORWARD TO MR. BILLIN OF FISH AND WILDLIFE.

BERT FUSIMORI
BERT FUSIMORI

OFFICIAL USE

SES
E 1539
HONOLULU

Country of origin GEORGETOWN Port of loading GEORGETOWN

No. of packages weight and marks	Full description of goods	Value
13 CONTAINERS	FARMED GREEN TURTLE - <i>Chelonia mydas</i> PRODUCTS 395 lbs Net PRIME STEAK	\$1156.75 F.O.B

All goods designated above were grown-produced in the country of origin stated herein

Signed [Signature] Exporter Producer
Position Sales Manager
Date MAR 5 1974



All goods designated above were grown-produced in the country of origin stated here in

Signed [Signature] Cayman Islands Chamber of Commerce
Date _____

P.O. BOX 1000, GRAND CAYMAN, B.W.I.

4/4/74

INSPECTOR GORA:

ATTACHED IS ORIGINAL CERTIFICATE OF ORIGIN, COPY
OF SPECIAL CUSTOMS INVOICE AND COPY OF EX 3-177,
FOR SHIPMENT OF TURTLE MEAT ARRIVED 3/12/74.
PLEASE FORWARD TO MR. DILLIN OF FISH AND WILDLIFE.

Bert Fujimori
AMER JUST BROKG CO
BERT FUJIMORI



CERTIFICATE OF ORIGIN

Cayman Islands Chamber of Commerce

P.O. BOX 1000 GEORGE TOWN, GRAND CAYMAN, B.W.I.

EXPORTER MTA AGRICULTURE LTD Box 645, GRAND CAYMAN, B.W.I	FOR OFFICIAL USE
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CONSIGNEE TROPIC SEAS ENTERPRISES 1777 ALA MOANA, ILIKAI SUITE 1539 HONOLULU
--

Country of origin S. CAYMAN	Port of loading GEORGETOWN
---------------------------------------	--------------------------------------

No. of packages weight and marks	Full description of goods	Value
13 CONTAINERS	FARMED GREEN TURTLE - chelonia mydas PRODUCTS 395 lbs Net PRIME STEAK	\$1156.75 F.O.B

All goods designated above were grown-produced in the country of origin stated herein

Signed _____ Exporter Producer
 Position **Sub Manager**
 Date **MAR 5, 1974**

All goods designated above were grown-produced in the country of origin stated here in

Signed _____ Cayman Islands Chamber of Commerce
 Date _____

P.O. BOX 1000, GRAND CAYMAN, B.W.I.

Read Carefully Instructions for Preparation of Invoice
(THIS FORM DOES NOT REQUIRE CERTIFICATION BY A UNITED STATES CONSULAR OFFICER)

SPECIAL CUSTOMS INVOICE

BUREAU OF CUSTOMS

(Optional only required for customs purposes)

I. THIS SECTION TO BE FILLED IN FOR EVERY SHIPMENT

1. How were goods obtained by importer? By purchase Agreement by purchase By some means other than a purchase
 DO NOT INCLUDE PURCHASE AND AGREEMENT BY PURCHASE GOODS IN SAME INVOICE. USE SEPARATE INVOICE FOR EACH

2. Place (city and country) and date obtained by importer: **MANA, ILIHA, SUITE 1539** 3. Name of exporting carrier: **BOX 645** 4. Date of shipment:

II. TO BE FILLED IN IF GOODS WERE PURCHASED OR AGREED TO BE PURCHASED

III. TO BE FILLED IN IF GOODS WERE NOT PURCHASED

1. Name and address of seller: **MANA CULTURE LTD BOX 645, S. CATMAN IS. W. I.** Name and address of person from whom goods were obtained:

2. Name and address of purchaser: **TROPIC SEAS ENTERPRISES** Name and address of consignee: **1777 AKA MANA, ILIHA SUITE 1539**

3. Date order accepted: **1-3-1974** Name and address of person for whose account goods are shipped: **HONOLULU**

IV. THIS SECTION TO BE FILLED IN FOR EVERY SHIPMENT

(1) NAME AND NUMBERS ON SHIPPING PACKAGES	(2) MANUFACTURER'S OR SELLER'S NUMBERS OR SYMBOLS	(3) QUANTITY AND FULL DESCRIPTION OF GOODS (State contents of each package and importer's numbers or symbols, if any)	(4) INVOICE UNIT PRICE OR VALUE	(5) INVOICE TOTALS AND SHOW SEPARATELY PACKING COSTS; ALL OTHER COSTS, CHARGES, AND EXPENSES	(6) CURRENT UNIT PRICE FOR HOME CONSUMPTION IN HOME CURRENCY	(7) CURRENT UNIT PRICE FOR EXPORT TO UNITED STATES
AI Marked PRIME STEAK	TURTLE LOGO	FARMED GREEN TURTLE PRODUCTS - Chelonia mydas 395 lbs PRIME STEAK 13 Containers	\$2.65 US per lb	\$1046.75 + \$110.00 Packing F.O.B. CATMAN	\$265 per lb	\$265 per lb
(8) Country of origin		(9) If rate of exchange is fixed or agreed, give rate		(10) If discount is freely offered, give terms, amount, and whether trade or cash		

V. THIS SECTION TO BE FILLED IN FOR EVERY SHIPMENT

1. IF GOODS WERE PURCHASED, have you stated in section IV, column 4, the purchase price of each item in the currency in which the goods were bought? Yes No.

2. IF THE GOODS WERE NOT PURCHASED, have you stated in section IV, column 4, the price that you would have received or would be willing to receive now if the goods were sold in the ordinary course of trade or exportation to the United States? Yes No.

3. What currency was used in this invoice transaction? **U.S.**

4. Whether the goods were purchased or obtained by the United States importer by some other means, have you stated in section IV, column 6:
 (A) (1) The price at which you are now selling the goods or offering them for sale for home consumption, including all applicable taxes? Yes No.
 (2) Is this price freely offered to anyone who wishes to buy the goods for home consumption? Yes No.
 (B) (1) Have you stated in section IV, column 7, the price at which you are now selling the goods or offering them for sale for export to the United States and whether this price is f.o.b., r.f.f., c.d.f., or whatever the fact may be? Yes No.
 (2) Is this price freely offered to anyone who wishes to buy the goods for export to the United States? Yes No.

5. Have you listed all charges and stated whether each amount has been included in or excluded from the invoice amount? Yes No.
 Is the inland freight included in the invoice price or value? Yes No. Is the price or value of the goods the same at the factory as at the point of delivery? Yes No. If the answer is No, have any sales been made at an ex-factory price? Yes No.

6. Are any rebates, drawbacks, bounties, or other grants allowed upon the exportation of the goods? Yes No. If so, have all been separately itemized? Yes No.

7. If such or similar goods are being sold or offered for sale in the home market for home consumption, what taxes are applicable and are they included in the price shown in section IV, column 6?

Rate Kind

Dillon

CONSERVATION

MARICULTURE IS ACTIVELY CONCERNED WITH THE CONSERVATION OF THE WILD GREEN TURTLE (CHELONIA MYDAS). Due to ruthless slaughtering and poaching the wild species has been in real danger of total extinction.

We are replenishing wild stock with Mariculture reared turtles in several locations throughout the world. We are also co-operating with research organizations in order to fully understand the life cycle of the green turtle.

SO, BY PURCHASING OUR FARMED PRODUCTS YOU ARE EASING THE PRESSURE ON THE WILD POPULATION AND ASSISTING MARICULTURE'S CONTRIBUTION TO THE CONSERVATION OF THE GREEN TURTLE THROUGHOUT THE WORLD.



3 GOOD REASONS FOR BUYING FARMED TURTLE STEAK from MARICULTURE LTD.

MAR 26 1974



Phone 9-3313

MARICULTURE LTD.
Box 645
Grand Cayman Island
British West Indies

FOOD VALUE

These average food compositions need little comment.

	Protein %	Fat %	Calories per 100 grams
Beef Sirloin	19.0	19.0	247
Chicken	21.0	2.0	109
TURTLE STEAK	23.0	0.2	102

AS A HEALTH OR DIETARY FOOD, HIGH PROTEIN TURTLE STEAK IS THE OBVIOUS ANSWER. It has all the qualities of the other top class meats, but has the absolute minimum fat/calorie levels.

OPTIMUM MEAT QUALITY INCLUDING FLAVOUR, TENDERNESS, TEXTURE, AND COLOUR IS OBTAINED BY ADHERING TO A STRICTLY CONTROLLED REARING PROGRAM.

ALL MARICULTURE FOOD PRODUCTS ARE PREPARED, PACKAGED, FROZEN, AND TRANSPORTED UNDER THE MOST STRINGENT HYGIENE CONDITIONS.

PRICE and AVAILABILITY

Due to efficient management and the natural feed requirements of the green turtle, we are able to keep production costs to a minimum.

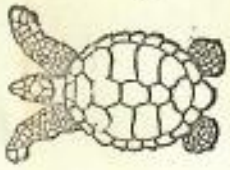
SO, WE CAN OFFER YOU A TOP QUALITY STEAK AT A SENSIBLE PRICE.

A BEEF FILLET QUALITY, BUT NOT THE PRICE:

Remember our turtle steak is 100% top quality lean meat. There is no bone or surplus fat.

YOU CAN ENJOY ALL YOU BUY.

Mariculture is a sound farming enterprise, SO WE CAN DELIVER THE GOODS EVERY DAY OF THE YEAR.



MARICULTURE, Ltd.

P.O. BOX 645, GRAND CAYMAN ISLAND, BRITISH WEST INDIES

INVOICE

No. 759

Mr Dick Barnes - Reference
 Mr Henry Bush.
 Tropic Sea Enterprises.
 Ilikai Suite 1539.
 1777 Ala Moana.
 Honolulu.
 Hawaii 96815.

INVOICE DATE	4 March 1974
OUR ORDER NO.	
YOUR ORDER NO.	
TERMS	P.O.B.
SALESMAN	Monthly settlement

SHIPPED TO	SHIPPED VIA	F.P.D. OR C.O.L.L.
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QUANTITY	DESCRIPTION	PRICE	AMOUNT
	<u>FARMED GREEN TURTLE (chelonia mydas) PRODUCTS</u>		
50 lbs	Prime Steak - 5 oz portion	U.S.\$.	132.50
345 lbs	Prime Steak - 8 oz portion		914.25
	Extra packaging charges		110.00
	Total	U.S.\$	1156.75
	13 packages weighing 500 lbs gross		
	Airway Bill No 378-0002240		
	Dispatched 5 March 1974.		
	Freight Cayman/Miami prepaid.		
		P.O.B. Grand Cayman	

MAF

A. F. DANTZLER

POST OFFICE BOX 969
PASCAGOULA, MISSISSIPPI 39267

September 21, 1982

Senator Thad Cochran
205 Russell Building
Washington, D. C. 20510

Dear Senator:

Enclosed find copy of newspaper clipping about the Turtle Farm at the Cayman Islands.

Approximately 2 years ago, the United States put Turtles on the endangered species list and has practically put the Turtle Farms in the Cayman Islands out of business.

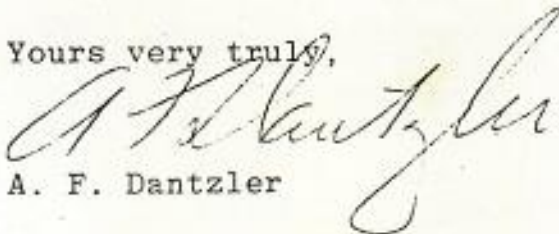
The Turtles raised on this farm in captivity were butchered and sold on the world-markets with the United States being the No. 1 customer.

It is apparent from the clipping that they have finally gotten the attention of Congressman John B. Breaux. The Turtle Farm was the largest on the Cayman Islands, and from my visits there I noticed all the feed for the Turtles was Raulston Purina, and I am sure other materials were all from state-side.

I would appreciate any help you could be in convincing the proper people that these Turtles are domestic and not wild Turtles being slaughtered. You will notice from the article, they are furnishing Turtles to a number of countries to replenish their stock.

With best regards.

Yours very truly,


A. F. Dantzler

AFD/eg
enclosure



res

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Deputy
NOAA
Chief
Assess
and Mr
NOAA



DR. JIM WOOD, General Manager of the Turtle Farm conduct the U.S. delegation on a tour of the farm. Dr. Jim Wood; Mr. Craig Potter, deputy to Mr. Arnett; Mr. Kearney Gomez, Principal Secretary, Agriculture Lands and Natural Resources; Hon. John B. Breaux, Chairman of the Fisheries and Wildlife Conservation and the Environment Subcommittee of the Merchant Marine and Fisheries Committee; Hon. G. Ray Arnett, Assistant Secretary for Fish, Wildlife and Parks, U.S. Department of the Interior, and Hon. James Winchester, Associate Administrator of the National Oceanic and Atmospheric Administration, Dept. of Commerce.

Washington officials are impressed with Turtle Farm

"We are very impressed. The Farm is a credit to the people of the Cayman Islands who have held on so tenaciously under adverse conditions." This was the conclusion of Representative John B. Breaux, leader of the delegation of members of the U.S. Congress and Administration who are in Grand Cayman observing the Turtle Farm Operations.

The delegates were conducted on a tour of the Farm yesterday by Dr. Jim Wood, General Manager of the Farm.

The purpose of the visit of the U.S. Officials representing various departments related to the issue of removing the ban from the importation of products from turtles raised in captivity, and to see the operations of the Farm at first hand, in preparation for hearings in Washington scheduled shortly after they return.

BY ELIZABETH EBANKS

responsible for the formulation of the Endangered Species Act, said that the hearings would be looking at the issued involved in lifting the prohibition on farmed turtle product.

The Hon. G. Ray Arnett, Assistant Secretary for Fish, Wildlife and Parks, U.S. Dept. of the Interior; said that

Mr. Arnett said that a similar thing had been done with the alligators in New Orleans, which were now greatly increased through similar methods.

Mr. Arnett continued that there were two schools of thought on lifting the ban on turtles bred in captivity, and that they would have to review the situation and the argument carefully so that in the long run it would not be detrimental to

from those raised in the wild, and that it was felt it might be a difficult situation to control. He said, however, that he was all for encouraging trade.

Mr. Bresaux said that the real problem was enforcement of the law: "We have to find ways that will not deter private enterprises. I think that we can hopefully find ways of framing legislation for legitimate operations, while at the same time cut down on the illegiti-

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October 11 September 1962

NEWS

The hearings to take place in Washington will review the legislation now in place, bring out both sides of the issue, and may then make recommendations, which in turn could be made into law, to lift the ban on products from turtle raised in captivity.

The delegate while touring the Farm quizzed Dr. Brown on the breeding and insemination method, losses through disease (the Farm has

solved this problem), whether some of the turtles were taken from the wild (all the green turtles are hatched at the farm) the feeding of the turtles, why there were different tanks, what happens when turtles in a tank injure themselves (severely injured are removed until they improve), mating periods, and were introduced to the various types of turtles at the farm.

They were shown the turtle eggs, and the baby hatchlings.

Throughout the tour, members of the delegation were heard to say how impressed they were with the operation.

Other members of the delegation are: Mr. Wayne Smith, Administrative Assistant to Congressman Brewster; Craig Potter, Deputy to Mr. Arnett; Hon. James Winchester, Associate Administrator of the National Oceanic and Atmospheric

Administration, Dept of Commerce; Mr. Dan Furlong, Deputy Regional Director, NOAA; Mr. Don Eckberg, Chief of Environmental Assessment Division NOAA, and Mr. Steve Boynton, NOAA.

U.S. officials are impressed

A Hunter Guards Wildlife

By Jack Anderson

WASHINGTON — G. Ray Arnett is a towering hulk of a man, a rough-spoken Great White Hunter and sport fisherman of the Ernest Hemingway school of machismo. So, by the curious logic of the Reagan administration, he is now the assistant secretary of the interior for fish and wildlife — the man responsible for protecting endangered species.

A onetime oil-company geologist and life member of the National Rifle Association, Arnett was named head of the California Fish and Game Department by Gov. Ronald Reagan. In that capacity, he successfully kept the sea otter off the endangered-species list.

Now, as the federal arbiter of life and death for the animal kingdom, Arnett has allowed fellow bwanas to bring back their African leopard kills as trophies and has permitted manufacturers of jogging shoes to import Australian kangaroo hides. He also favors turning over the world's only winter refuge for whooping cranes to the tender mercies of the state of Texas, which wants to develop part of the rare birds' habitat for commercial purposes.

Arnett has turned his interior job into a series of safaris. At government expense, he has gone fishing off New Zealand and in Virginia. He has been heard to boast of his on-the-job game expeditions.

RECENTLY ARNETT combined a lot of pleasure with a little business on a four-day junket to the Cayman Islands in the sunny

The man responsible for protecting endangered species seems more intent on despoiling nature.

Caribbean. The ostensible point of the trip was to see whether an import exemption might safely be granted for green sea turtles raised in captivity. The reptiles, now on the threatened-species list, are coveted for their meat and their shells.

Arnett's hosts were the Cayman Islands government and the proprietors of a green sea-turtle farm, and they set out to entertain the wildlife protector in grand style.

Here's how the trip went:

Arnett and his party flew down on a Saturday and checked into a plush resort hotel. Sunday was spent scuba diving and fishing for marlin.

On Monday, the group went hunting. The quarry was supposed to be pigeons and doves. But upon their return, one member of the hunting party was heard to remark that he had "winged a couple of parrots." As it happens, the only such bird on the island is the Grand Cayman Amazon, which is on the endangered-species list.

On Tuesday, along with more scuba diving, Arnett finally squeezed in a tour of the turtle farm. The assistant secretary was reportedly impressed with the operation, though he had neglected to take a turtle expert along to make an appraisal.

THE POINT at issue is whether the turtle farm is self-sufficient or still depends on wild turtles. The top scientist on the farm told my associate Peter Grant that, contrary to the turtle farmers' prediction five years ago, not a single turtle hatched from an egg laid in captivity has been able to produce offspring.

In short, there is a suspicion that if the turtle farmers were to be granted an exemption to the federal prohibition on importing turtle products, they would have to use wild turtles to satisfy their customers' demands. The Cayman Islands entrepreneurs obviously hoped for Arnett's support in their petition for an exemption.

The rugged Arnett is expected to endorse the turtle farmers' exemption request, leaving the question: Where next for the peripatetic assistant interior secretary? Labrador at baby-seal clubbing time?

United Feature Syndicate



MONITOR

THE CONSERVATION, ENVIRONMENTAL
AND ANIMAL WELFARE CONSORTIUM

1506 19th St., N.W.
Washington, D.C. 20036

(202) 234-6576

Agenda - 20 September 1982

- 1) Federal Register Notices
- 2) Draft letters
- 3) Information and Action Items
 - a) Archibald Reception Tomorrow -- At the new Reptile House at the National Zoo, 7 to 9 p.m. George Archibald of the International Crane Foundation will be honored for his work in China. Proceeds (\$15 per head) will help set up a China Crane Center to help save five endangered crane species in China. Archibald lectures on the cranes of China tonight at the Smithsonian.
 - b) Cayman Turtle Battle Renewed -- The bitter fight by the Cayman Islands Turtle Farm to open the U.S. market for its green turtle meat will be boiling again next month when Rep. John Breaux (D - Louisiana) calls a hearing in his House subcommittee on fisheries and wildlife, tentatively set for 4 October. Breaux last week visited the turtle farm on the tiny British dependency south of Cuba in the Caribbean, along with Ray Arnett, assistant secretary of Interior for fish and wildlife and parks, and James Winchester, associate administrator of the Commerce Dept.'s National Oceanic and Atmospheric Administration. Interior and Commerce split jurisdiction over sea turtles, depending on whether they are on land or in the sea.

Breaux and Arnett have been lobbied assiduously by the Cayman Islands Turtle Farm, and the governments of the Cayman Islands and the United Kingdom, according to sources, and are now enthusiastic backers of efforts to lift the U.S. trade ban, which resulted from a court decision in 1978 that the turtle farm is not a "ranch" since the turtles were produced from eggs taken from the wild. The turtle farm has been owned by a wealthy German woman, Frau Mittag, who has spent hundreds of thousands of dollars trying to open the U.S. market. She is now reportedly trying to sell the money-losing operation to the Cayman Islands government, which will only take it over if the U.S. ban is lifted.

The Breaux hearing could put unbearable pressure on the federal agencies to overturn the trade ban. Such action could have a severe effect at next year's CITES meeting, where there are several proposals to open international trade in green turtle meat from "ranching" operations elsewhere. Expected to testify against the turtle farm are Michael Bean of Environmental Defense Fund and David Ehrenfeld, Rutgers University professor who has studied the Cayman Islands issue.
 - c) Taub Case Update -- Alex Pacheco of People for the Ethical Treatment of Animals (PETA) will review the latest developments in the landmark court case on the laboratory monkeys and penalties against the convicted researcher, Dr. Edward Taub.
 - d) Japan Reels from Anti-Whaling Pressure -- Japan's whaling commissioner, Kunio Yonezawa, has arrived in Washington for high-level talks this week with top U.S. officials to try to counter the growing political sentiment here to bring heavy penalties against nations objecting to the 1986 whaling ban. The Senate letter signed by 66 Senators and last week's House hearing, at which U.S. commissioner John Byrne reiterated U.S. resolve, have Japan greatly distressed.



MONITOR

THE CONSERVATION, ENVIRONMENTAL
AND ANIMAL WELFARE CONSORTIUM

1506 19th St., N.W.
Washington, D.C. 20036

(202) 234-6576

Agenda - 13 September 1982

- 1) Federal Register Notices
- 2) Draft letters
- 3) Information and Action Items
 - a) Tropical Deforestation Hearing -- Thursday, 16 September at 2:30 p.m. in 2318 Rayburn before two House subcommittees: international organizations and natural resources, agriculture research and environment. Oversight of U.S. policies and practices for helping halt the destruction of tropical forests, which are disappearing at the rate of 18 to 20 million hectares annually, or an area half the size of California. A General Accounting Office report critical of AID programs around the world will be released at the hearing.
 - b) Whale Hearing -- Thursday, 16 September at 1 p.m. in H-236 in the Capitol before Rep. Don Bonker's House subcommittee on international organizations. The hearing will focus on the outcome of the July IWC meeting and U.S. response to any defiance by the whaling nations of the 1986 commercial whaling ban and the cold harpoon prohibition.
 - c) Japan Shocked by Senate Letter -- Japanese government and fishing industry officials are gravely worried by the implications of the recent letter, signed by 66 U.S. Senators, to Secretary of Commerce Baldrige calling on the U.S. to take a hard line against nations defying the 1986 whaling ban. The Japanese reportedly find the letter to be "very severe." The decision-making in Japan on whether to file an objection to the ban is complicated by elections scheduled for late October or early November for the ruling Liberal Democratic Party and the Prime Minister. The present P.M., Zenko Suzuki, will probably be unopposed for another two-year term. He may reward his coastal constituency by promising to object to the whaling ban. Objection deadline is 4 November.
 - d) Crane Lecture, Reception -- Monday, 20 September Audubon lecture on the cranes of China by George Archibald, director of the International Crane Foundation, at the Smithsonian, 6 and 8:30 p.m. Reception on Tuesday, 21 September from 7 to 9 p.m. at the new Reptile House at the National Zoo to honor Archibald and to support the establishment of a China Crane Center.
 - e) CITES Strategy Meeting -- Wednesday, 15 September at 3:30 p.m. at Defenders of Wildlife. Another planning session by conservation groups for next year's CITES meeting. Donna Hart of International Fund for Animal Welfare will be in town to meet with us. IFAW is taking the lead on seeking Appendix I listing of the harp and hooded seals. Wednesday is the deadline for comments on proposed listings by the U.S. of six mammals, three birds, two reptiles and 31 plant species. These are species outside those already being considered under the ten-year review of all listed species.
 - f) Acid Rain Debate Next Month -- Monday, 25 October Audubon lecture at the Smithsonian pitting Canadian M.P. John Fraser against U.S. Rep. Edward Madigan (R - Illinois). Fraser, former Minister of the Environment in Canada, will describe the devastating effects of acid rain, while Madigan, from the coal-mine and power-plant heartland, will defend the pollution sources.



MONITOR

THE CONSERVATION, ENVIRONMENTAL
AND ANIMAL WELFARE CONSORTIUM

1506 19th St., N.W.
Washington, D.C. 20036

(202) 234-6576

Agenda - 4 October 1982

- 1) Federal Register Notices
- 2) Draft letters
- 3) Information and Action Items
 - a) CITES Planning Meeting -- Wednesday, 13 October from 1 to 3 p.m. in room 3004 at Interior Dept. Another informal discussion of CITES issues with Rick Parsons and his staff at the Wildlife Permit Office and elsewhere in Interior. The effort by the Cayman Islands Turtle Farm to export green sea turtle meat to the U.S., by asking for a reinterpretation of the definition of "ranching," should be a lively topic. The attorney for the turtle farm, Stephen Boynton (who also represents the American Fur Industry) will be present.
 - b) Coastal and Marine Resources Meeting -- Wednesday, 6 October at 12:30 p.m. at Center for Law and Social Policy, 1751 N St. N.W. The task force on this issue for the Global Tomorrow Coalition, chaired by Clif Curtis of CLASP, will address such issues as marine mammals, sustainable fisheries management, the Law of the Sea Convention, coastal habitat protection, OCS oil and gas leasing, and Antarctica. An action plan for the next year will also be discussed.
 - c) Bat Expert -- Visiting the Monitor meeting today is Dr. Merlin Tuttle, curator of the Milwaukee Public Museum and director of the recently-organized Bat Conservation International, which is attempting to halt the rapid disappearance of bat species around the world. Bats play vital roles in many ecosystems. Tuttle is currently touring the world to study bat populations for the production of his forthcoming book, Bats of the World.
 - d) All-Species Day Parade Next Year -- Ponderosa Pine, coordinator of the international celebrations of the interdependence of all species and the rights of all living things, is in Washington today to launch plans for an All-Species Day Parade here in the spring of 1983. Sixteen of the parades have been held since 1978 across the U.S. and in England and India. Persons interested in helping organize a parade here, or in New York and Boston next spring, should contact Ponderosa at (415) 868-0268 or 0146.
 - e) Endangered Species Act Reauthorized -- In the final hours before Congress packed up last week, the Act was renewed for three years and sent to President Reagan for signature. There are some reports that arch-conservatives in the Administration may call for a veto.
 - f) LeBlanc Removed in Canada -- The strongest supporter of seal-killing in Canada, Fisheries Minister Romeo LeBlanc, was replaced last week by Prime Minister Trudeau in an apparent demotion to Minister of Public Works. New head of fisheries is Pierre De Bané, a member of Parliament from the Gaspé Peninsula at the mouth of the St. Lawrence. Little is known of his position on sealing.



MONITOR

THE CONSERVATION, ENVIRONMENTAL
AND ANIMAL WELFARE CONSORTIUM

1506 19th St., N.W.
Washington, D.C. 20036

(202) 234-6576

Agenda - 27 September 1982

- 1) Federal Register Notices
- 2) Draft letters
- 3) Information and Action Items
 - a) Lab Animal Demo -- Friday, 15 October at noon at the Food and Drug Administration (FDA) headquarters, 200 C-St. SW, Washington, D.C. Animal rights groups are sponsoring the demonstration to launch the International Lethal Dose 50 campaign, an effort to outlaw the testing method for new products that uses millions of animals (more than 5 million in the U.S. alone) annually. LD 50 means the amount a toxic substance that will kill, in a single dose, 50% of a group of test animals. Dogs, cats, monkeys, rats and other animals are force-fed or injected with everything from oven cleaners to detergents. The test is labelled crude, cruel and inefficient by the humane community. Animals often suffer for days, without painkillers, before corrosive chemical poisoning kills them.

October 15th is World Day for Animals, and similar demonstrations are being held in Europe, across the U.S., and elsewhere. People for the Ethical Treatment of Animals (PETA) is organizing the demo. Speaking will be Henry Spira, who organized the effort to ban the Draize test and will lead the LD 50 campaign. To dramatize the effort, PETA wants demonstrators to come dressed as a lab animal (rabbit, rat, monkey) or as a researcher. For more information, call PETA at (202) 726-0156.
 - b) Endangered Species Act Reauthorization -- The year-long effort to protect the Act from being gutted by special interests should culminate this week in a great victory for the conservation and animal welfare communities when the Congress passes the three-year reauthorization and sends it to President Reagan for signature. All major attacks were defeated and significant strengthening amendments were added, such as requirements for listing species in a specific period after proposal and the removal of economic considerations from the listing process.
 - c) Japan Unsure in Whaling Decision -- Japanese whaling commissioner Yonezawa, who visited Washington last week for high-level talks, left the impression with U.S. officials that Japan is divided about how to respond to the 1986 commercial whaling ban voted by the IWC. With the U.S. stating its firm resolve to invoke the Pelly and Packwood-Magnuson Amendments against nations violating quotas, and the powerful Japanese labor unions calling for an objection to the IWC decision, the Japanese government is caught between a rock and a hard place. The decision is complicated by the elections coming soon in Japan's ruling Liberal Democratic Party.
 - d) International Extinction Symposium -- Next year, 19-20 May in Pretoria, South Africa. Sponsored by the Endangered Wildlife Trust, the leading South African conservation group, the symposium on "The Extinction Alternative" will focus on "the increasing threat to indigenous animal and plant species in Southern Africa posed by development pressure, by changing vegetation patterns, by habitat destruction, by invasion of alien species and by commercial exploitation." For more information, contact the Trust at P.O. Box 645, Bedfordview 2008, South Africa. Clive Walker is executive director.



ENVIRONMENTAL DEFENSE FUND
1525 18th STREET, N.W.
WASHINGTON, D.C. 20036

ENVIRONMENTAL DEFENSE FUND

MEMORANDUM

TO: Files

FROM: Michael Bean *Michael Bean*

RE: CAYMAN TURTLE FARM

DATE: September 16, 1982

Because Cayman Turtle Farm is again receiving a fair amount of attention, this memorandum summarizes their actual breeding results with "farm reared" turtles (i.e., those hatched on the farm from eggs taken from the wild) and compares those results with the projections made to the IUCN Marine Turtle Group in August and November, 1975. Those projections forecast that the farm-reared stock would quickly replace the captive-wild turtles as the principal source of the Farm's production. The hatchlings produced by farm-reared females in 1979 were originally forecast to provide more than 13,000 slaughterable turtles at slaughter age of three or four, enough to meet the Farm's entire slaughter needs. In fact, of the 606 hatchlings produced by farm-reared females in 1979, only 218 survived to June 1, 1980. Though that represents the best year to date, it constitutes less than two percent of the number forecast to IUCN.

One observation needs to be made about the attached table. The final set of columns compares the Farm's projection of the number of turtles surviving to age three or four (slaughter age) against actual survival to June 1 of the year following hatching. Thus, the numbers in the final column may exceed the number that have actually survived, or will actually survive, to full slaughter age. All the data in the attached table comes from the Farm itself.

community to international commercial trade in sea turtle products. Accordingly, I urge each of you to submit a written statement for the hearing record. David Ehrenfeld has agreed to testify in person. The statement should be sent to the following address, with a request that it be included in the record of the October 7 hearing:

Congressman John B. Breaux
Subcommittee on Fisheries and Wildlife Conservation
and the Environment
Committee on Merchant Marine and Fisheries
U.S. House of Representatives
Washington, D.C. 20515.

Statements should be sent so as to arrive in advance of the October 7 hearing, if at all possible. I would appreciate receiving copies and would be happy to answer inquiries from any of you.

Attached is a separate memorandum summarizing the most recent information available about the Farm's breeding results.



ENVIRONMENTAL DEFENSE FUND

MEMORANDUM

TO: Sea Turtle Scientists Interested in Cayman Turtle Farm
FROM: Michael J. Bean *Michael Bean*
RE: October 7 Congressional Hearing
DATE: September 16, 1982

On October 7, 1982, the Subcommittee on Fisheries and Wildlife Conservation and The Environment of the House Committee on Merchant Marine and Fisheries will hold a hearing to look into the question whether the United States should continue to prohibit the importation of Cayman Turtle Farm products into the United States. Reportedly, the chairman of the subcommittee, John Breaux (D-La.) agreed to schedule the hearing at the request of Stephen Boynton, a friend of Breaux who now serves as the Farm's attorney.

The Fish and Wildlife Service and National Marine Fisheries Service have been under increasing pressure to reopen the U.S. market for many months. That pressure has come from the Farm's political allies in Congress, ideological allies in the Executive branch, and the Pacific Legal Foundation (a sister organization to the Mountain States Legal Foundation from which James Watt came). The Breaux hearing may be of pivotal significance because Breaux is likely to embrace the Farm's point of view unquestioningly, and because his position as subcommittee chairman gives him considerable influence over the decisions of the Fish and Wildlife Service and National Marine Fisheries Service. Recognizing that, the Farm and Cayman government are actively soliciting statements of support from scientists who have used the Farm's turtles or facilities for research.

If the two Services are to hold the line against the mounting pressure, it will be necessary to demonstrate that there is still substantial opposition within the scientific

FARM-REARED STOCK PRODUCTION

	<u>Hatchlings</u>				<u>Survival to Slaughter (3-4 Years)</u>				
	<u>8/75</u> <u>Projection</u> <u>to IUCN</u>	<u>11/75</u> <u>Projection</u> <u>to IUCN</u> <u>(30%)</u>	<u>Actual</u>	<u>8/75</u> <u>Projection</u> <u>to IUCN</u>	<u>11/75</u> <u>Projection</u> <u>to IUCN</u>	<u>Actual</u>	<u>8/75</u> <u>Projection</u> <u>to IUCN</u>	<u>11/75</u> <u>Projection</u> <u>to IUCN</u>	<u>Actual</u> <u>Survival</u> <u>to 1 Yr.</u>
<u>Eggs</u>									
75	600	---	600	300 (50%)	---	199 (33%)	144 (48%)	---	136 (68%)
76	1,200	360	617	600 (50%)	360	51 (8%)	360 (60%)	216 (60%)	30 (59%)
77	3,000	900	739	1,650 (55%)	900	24 (3%)	1,072 (65%)	585 (65%)	6 (25%)
78	9,600	2,880	4,322	5,760 (60%)	2,880	1,115 (26%)	4,608 (80%)	2,304 (80%)	190 (17%)
79	28,000	8,640	8,300	17,280 (60%)	8,640	601 (7%)	13,824 (80%)	6,912 (80%)	218 (36%)
80	48,000	14,400	9,336	28,800 (60%)	14,400	372 (4%)	23,040 (80%)	11,520 (80%)	97 (26%)



University of Hawaii at Manoa

Hawaii Institute of Marine Biology

P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744

Cable Address: UNIHAW

September 27, 1982

Congressman John Brueaux
Subcommittee on Fish and Wildlife
House Committee on Merchant Marine
and Fisheries
United States Congress
Washington, D. C. 20515

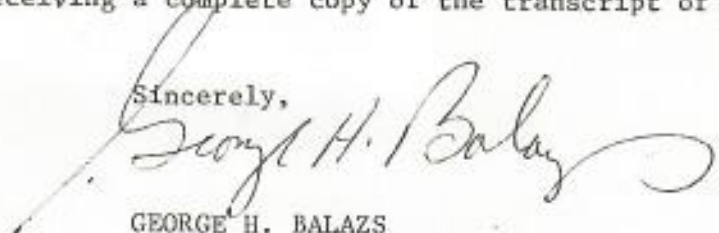
Dear Congressman Brueaux:

It is my understanding that the Subcommittee on Fish and Wildlife will be holding a hearing during early October on the question of foreign commercial sea turtle farms possibly being exempted from our Endangered Species Act and allowed to import and market their products in the United States. As a researcher of Pacific sea turtles for the past 11 years, and the current Deputy Chairman of the I.U.C.N. Marine Turtle Specialist Group, I am deeply interested in this subject and concerned about possible changes in the law that could adversely impact the conservation of wild sea turtles.

I do not know the circumstances leading up to the decision to hold a hearing, however, perhaps I can be of help to your efforts to gather together all of the current information on this complex subject. Earlier this year, a lengthy petition was submitted to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service by an organization known as the Pacific Legal Foundation. The petition asked that a trade exemption be granted for farmed sea turtle products, the very same topic you are planning to review in the forthcoming hearing. For several months now, the petition has been evaluated by some of the most qualified biologists and administrators within the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. Their findings and recommendations on this matter should be completed at the present time. Consequently, to insure that your subcommittee has the most comprehensive information available, I recommend that you immediately contact these two government agencies and request copies of their entire review and results.

I will be in Samoa for most of October, however, when I return to Honolulu I would greatly appreciate receiving a complete copy of the transcript of your hearing.

Sincerely,


GEORGE H. BALAZS
Assistant Marine Biologist

GHB:ec

ACK ANDERSON

Machismo Is In At Interior's Wildlife Division

G. Ray Arnett is a towering hulk of a man, a rough-spoken Great White Hunter and sport fisherman of the Ernest Hemingway school of machismo. So, by the curious logic of the Reagan administration, he is now the assistant secretary of Interior for fish and wildlife—the man responsible for protecting endangered species.

A onetime oil company geologist and life member of the National Rifle Association, Arnett was named head of the California Fish and Game Department by then-governor Ronald Reagan. In that capacity, he successfully kept the sea otter off the endangered-species list.

Now, as the federal arbiter of life and death for the animal kingdom, Arnett has allowed fellow bwanas to bring back their African leopard kills as trophies and has permitted manufacturers of jogging shoes to import Australian kangaroo hides. He also favors turning over the world's only winter refuge for whooping cranes to the tender mercies of the state of

Texas, which wants to develop part of the rare birds' habitat for commercial purposes.

Arnett has turned his Interior job into a series of safaris. At government expense, he has gone fishing off New Zealand and in Virginia. He has been heard to boast of his on-the-job game expeditions.

Recently Arnett combined a lot of pleasure with a little business on a four-day junket to the Cayman Islands in the sunny Caribbean. The ostensible point of the trip was to see whether an import exemption might safely be granted for green sea turtles raised in captivity. The reptiles, on the threatened-species list, are coveted for their meat and their shells.

Arnett's hosts were the Cayman Islands government and the proprietors of a green sea-turtle farm, and they set out to entertain the wildlife protector in grand style. Here's how the trip went:

Arnett and his party flew down on a Saturday and checked into a plush resort hotel. Sunday was spent scuba diving and fishing for marlin.

On Monday, the group went hunting. The quarry was supposed to be pigeons and doves. But upon their return, one member of the hunting party was heard to remark that he had "winged a couple of parrots." As it happens, the only such bird on the island is the Grand Cayman Ama-

zon, which is on the endangered-species list.

On Tuesday, along with more scuba diving, Arnett finally squeezed in a tour of the turtle farm. The assistant secretary was reportedly impressed with the operation, though he had neglected to take a turtle expert along to make an appraisal.

The point at issue is whether the turtle farm is self-sufficient or still depends on wild turtles. The top scientist on the farm told my associate, Peter Grant, that, contrary to the turtle farmers' prediction five years ago, not a single turtle hatched from an egg laid in captivity has been able to produce offspring.

In short, there is a suspicion that if the turtle farmers were to be granted an exemption to the federal prohibition on importing turtle products, they would have to use wild turtles to satisfy their customers' demands. The Cayman Islands entrepreneurs obviously hoped for Arnett's support in their petition for an exemption.

The rugged Arnett is expected to endorse the turtle farmers' exemption request, leaving the question: Where next for the peripatetic assistant Interior secretary? Labrador at baby-seal clubbing time?

Footnote: Arnett refuses to talk to reporters "as a matter of principle." His press spokesman did not respond to several inquiries.

PHOTO BY AP/WIDEWORLD; ILLUSTRATION BY JANE KETCHUM

A. F. DANTZLER

POST OFFICE BOX 969
PASCAGOULA, MISSISSIPPI 39367

CABLE:
DANTZLER

September 21, 1982

Senator Thad Cochran
205 Russell Building
Washington, D. C. 20510

Dear Senator:

Enclosed find copy of newspaper clipping about the Turtle Farm at the Cayman Islands.

Approximately 2 years ago, the United States put Turtles on the endangered species list and has practically put the Turtle Farms in the Cayman Islands out of business.

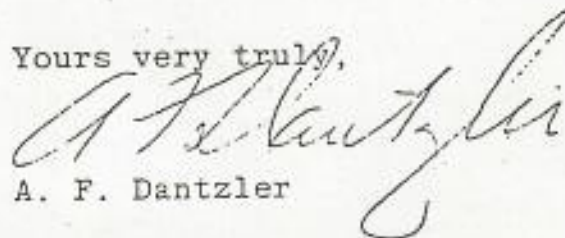
The Turtles raised on this farm in captivity were butchered and sold on the world-markets with the United States being the No. 1 customer.

It is apparent from the clipping that they have finally gotten the attention of Congressman John B. Breaux. The Turtle Farm was the largest on the Cayman Islands, and from my visits there I noticed all the feed for the Turtles was Raulston Purina, and I am sure other materials were all from state-side.

I would appreciate any help you could be in convincing the proper people that these Turtles are domestic and not wild Turtles being slaughtered. You will notice from the article, they are furnishing Turtles to a number of countries to replenish their stock.

With best regards.

Yours very truly,



A. F. Dantzler

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enclosure

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DR. JIM WOOD, General Manager of the Turtle Farm conduct the U.S. delegation on a tour of the farm. Dr. Jim Wood; Mr. Craig Potter, deputy to Mr. Arnett; Mr. Kearney Gomez, Principal Secretary, Agriculture Lands and Natural Resources; Hon. John B. Breaux, Chairman of the Fisheries and Wildlife Conservation and the Environment Subcommittee

of the Merchant Marine and Fisheries Committee; Hon. G. Ray Arnett, Assistant Secretary for Fish, Wildlife and Parks, U.S. Department of the Interior, and Hon. James Winchester, Associate Administrator of the National Oceanic and Atmospheric Administration, Dept. of Commerce.

Washington officials are impressed with Turtle Farm

"We are very impressed. The Farm is a credit to the people of the Cayman Islands who have held on so tenaciously under adverse conditions." This was the conclusion of Representative John B. Breaux, leader of the delegation of members of the U.S. Congress and Administration who are in Grand Cayman observing the Turtle Farm Operations.

The delegates were conducted on a tour of the Farm yesterday by Dr. Jim Wood, General Manager of the Farm.

The purpose of the visit of the U.S. Officials representing various departments related to the issue of removing the ban from the importation of products from turtles raised in captivity, and to see the operations of the Farm at first hand, in preparation for hearings in Washington scheduled shortly after they return.

BY ELIZABETH EBANKS

responsible for the formulation of the Endangered Species Act, said that the hearings would be looking at the issued involved in lifting the prohibition on farmed turtle product.

The Hon. G. Ray Arnett, Assistant Secretary for Fish, Wildlife and Parks, U.S. Dept. of the Interior said that

Mr. Arnett said that a similar thing had been done with the alligators in New Orleans, which were now greatly increased through similar methods.

Mr. Arnett continued that there were two schools of thought on lifting the ban on turtles bred in captivity, and that they would have to review the situation and the argument carefully so that in the long run

from those raised in the wild, and that it was felt it might be a difficult situation to control. He said, however, that he was all for encouraging trade.

Mr. Breaux said that the real problem was enforcement of the law. "We have to find ways that will not deter private enterprises. I think that we can hopefully find ways of framing legislation for legitimate operations, while at the same time not set down on the world-

Friday 11 September 1962

NEWS

U.S. officials are impressed

The hearings to take place in Washington will review the legislation in place, bring out both sides of the issue, and may then make recommendations, which in turn could be made into law, to lift the ban on products from turtle raised in captivity.

The delegate while touring the Farm quizzed Dr. Brown on the breeding and insemination method, losses through disease (the Farm has

solved this problem), whether some of the turtles were taken from the wild (all the green turtles are hatched at the farm) the feeding of the turtles, why there were different tanks, what happens when turtles in a tank injure themselves (neverly injured are removed until they improve), mating periods, and were introduced to the various types of turtles at the farm.

They were shown the turtle eggs, and the baby hatchlings.

Throughout the tour, Administration, Dept of members of the delegation were heard to say how impressed they were with the operation.

Other members of the delegation are: Mr. Wayne Smith, Administrative Assistant to Congressman Brant; Craig Potter, Deputy to Mr. Arnett; Hon. James Winchester, Associate Administrator of the National Oceanic and Atmospheric

Assessment Division NOAA, and Mr. Steve Boynton, NOAA.



Cayman Turtle Farm: One of a Kind in the World!

Story and Photos by Sharlene S. Branham
OZS Executive Director

LIBRARY OF
GEORGE H. BALAZS

WHEN mother and I awakened on the *SunViking* ship, we saw one of the most beautiful islands in the Caribbean: Grand Cayman. The island is situated 500 miles south of Miami and 200 miles northwest of Jamaica, from where we had just sailed the day before.

Cayman Turtle Farm Limited is located on the northwest point of Grand Cayman. It is indeed unique, the only one of its kind in the world. These islands, with their beautiful, crystal clear water and year-round temperatures of 75-80°F, offer a suitable habitat for sea turtles.

In 1503, Christopher Columbus visited Cayman, and the name has been synonymous with that of the sea turtle ever since. Early visitors found no people, but an abundance of green sea turtles. The Cayman turtles became the regular source of fresh meat for the Caribbean seamen and, in later years, for the early settlers. Columbus noted such an abundance of turtles in the native waters that he first named Cayman "Las Tortugas" — or "The Turtles". So important through the centuries have the turtles been for Cayman that the coat of arms of this British Crown Colony carries a sea turtle.

Today Cayman Turtle Farm contributes substantially to the economy of the Cayman Islands. The commercial history of the sea turtle did not, however, come into being until nearly 100 years after Columbus' discovery when a pirate captain, William King, landed in Cayman and found that the eggs of one turtle would "feed ten men for a day."

Seamen soon learned that they could carry turtles on board and enjoy fresh meat at sea, and entrepreneurs soon realized the money making possibilities of turtle products. They began ranging over the Caribbean, hunting the slow-moving creatures, and for scores of years this marketing of turtles and their by-products continued, decimating the

turtle population with near disastrous results.

Reproduction in sea turtles is a fascinating and complex subject, and is not fully understood. Their existence in the wild is still a mystery. During the breeding season, the mature turtles return thousands of miles to exactly the same beaches where they themselves started life. There is a complex courting procedure. Male and female will mate sometimes for periods of up to 52 hours. In the wild, the females leave the water only at night to lay their eggs; the males never go on shore. The large females slowly and laboriously make their way to the beach and then begin to scoop a hole with their rear flippers. Sometimes the turtle digs the nest in such a position that it becomes washed out by the tide.

The soft-shelled eggs, on an average of 100 per nest, are deposited in the hole and the nest covered with sand. The female will do this about four times in a season, usually about 10 days apart. The eggs deposited on the beach are subject to heavy predation.

After hatching, the baby turtles struggle to the sea. It is a hazardous journey. Crabs and birds take a heavy toll and, once they reach the surf, fishes, including sharks, kill the majority of those that have survived the journey. Less than one percent of all turtle hatchlings survive in the wild.

The turtling industry in Cayman came full circle in 1968 when a Miami-based marine biologist and an associate formed Mariculture, Ltd., the first and only commercial turtle farm in the world. This venture changed hands and is now known as the Cayman Turtle Farm.

At the farm, the mating season occurs between April and July. Nesting follows in about two weeks and is repeated several times. There are two man-made beaches at the farm, constructed to simulate nature as much as possible and to be used for egg-laying

by the female turtles. After the eggs are laid, they are immediately removed to the safety of the hatchery where, after approximately 60 days, healthy young turtles emerge. Incubation methods are put into practice, including temperature control, humidity and oxygen supply.

After hatching, the baby turtles are not ready for the water until they have absorbed their yolk sacs. This takes about three days. They are kept at the hatchery, then brought to the small tanks where they immediately begin to swim. They are kept in this tank until they are six months old. In the first months of life, the dark black and white belly color serves as a protective mechanism, making the little turtles difficult to detect by their predators.

When the turtle grows older, the wonderful variety of shell patterns and color begin to emerge. The length of the back shell can be a rough guide for the observer as to the age of the turtle. A 10-inch back shell would indicate a one-year-old turtle, a 15-inch shell 18 months, and a 20-inch shell three years.

At the farm, turtles are fed on a pelleted high-protein food, using fish meal and soy beans as a base. It varies in size according to the age of the turtles. The food has the capacity to float to make for easier feeding.

In 1978, the United States, which provided the market for about 85 percent of the farm's products, enacted legislation making it illegal to import turtle products into the country. But turtles are still being born and raised at the farm, and large numbers are being fed in Cayman waters. In October 1980, farm officials released some 2,000 turtles, and an additional 10,000 were released in 1981. The farm, rather than retreating "into a shell," is making plans to expand operations by construction of a gallery where they live.

If you have the opportunity to visit the island of Grand Cayman, put a visit to the farm at the top of your list.



Volume XVIII Number 1

February 1982

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Journal of Ornithology

WU INFOMASTER

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FISH AND WILDLIFE SERVICE
WILDLIFE PERMIT OFFICE
BOX 3654
ARLINGTON VA 22203

CONFIRMATION

BT

YOUR FEDERAL REGISTER NOTICE DATED JANUARY 3 1983 CONCERNING
INTENT TO REVIEW RULES ON SEA TURTLES HAS JUST COME TO OUR
ATTENTION. THE PROPOSALS SUBMITTED BY SURINAME AND REUNION
TO RANCH GREEN TURTLES ARE OF FUNDAMENTAL IMPORTANCE TO YOUR
FEDERAL REGISTER NOTICE. PLEASE SEND COPIES OF THESE PROPOSALS
SO THAT PROPER EVALUATION CAN BE CONDUCTED. ALSO, IT IS
URGENTLY REQUESTED THAT YOU EXTEND COMMENT PERIOD TO 60 DAYS
(MARCH 2 1983). A 30 DAY PERIOD AS NOW EXIST IS CLEARLY TO
SHORT FOR THIS IMPORTANT NOTICE OF INTENT.

GEORGE BALAZS
HAWAII INSTITUTE OF MARINE BIOLOGY
BOX 1346
KANEEOHE HAWAII 96744

NNNN -

(GEORGE BALAZS
HIMB, BOX 1346
KANEEOHE HI 96744) .END

ACCEPTED
13456

1-PC

227 Subpart D on sea turtle species listed as threatened under the Endangered Species Act, with particular attention on whether or not to allow U.S. trade in certain sea turtle products according to CITES. Written comments are invited.

DATE: Comments on this notice must be received by February 2, 1983.

ADDRESS: Please address correspondence to the U.S. Fish and Wildlife Service, Federal Wildlife Permit Office, P.O. Box 3654, Arlington, Va. 22203. Information on this notice is available for review during the hours of 7:45 a.m. to 4:15 p.m. Monday through Friday except holidays in Room 601, 1000 N. Glebe Road, Arlington, Va.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Batky, Staff Biologist, U.S. Fish and Wildlife Service, Federal Wildlife Permit Office, P.O. Box 3654, Arlington, Va. 22203; (703/235-1903), or Mr. Charles Karnella, National Marine Fisheries Service, Office of Marine Mammals and Endangered Species, U.S. Department of Commerce, Washington, D.C. 20235; (202/634-7471).

SUPPLEMENTARY INFORMATION: The U.S. Fish and Wildlife Service and the National Marine Fisheries Service share jurisdictional responsibility for sea turtles listed under the Endangered Species Act (ESA). The loggerhead (*Caretta caretta*) and certain populations of green (*Chelonia mydas*) and olive ridley (*Lepidochelys olivacea*) sea turtles are listed as Threatened species under the ESA. The Services adopted Special Rules, 50 CFR 17.42(b) and 50 CFR 227 Subpart D (43 FR 32800), for the conservation of these species. These rules allow the Services to issue permits to take, import and export such species for scientific research, zoological exhibition or educational purposes and to enhance the propagation or survival of these species. The rules prohibit trade in these species for commercial purposes. The Services considered whether to allow an exception to these restrictions on commercial trade for mariculture during the rulemaking, but did not allow an exception in the final rules.

These species are also listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As a general rule, Appendix I species cannot be imported or exported for commercial purposes.

The Services have decided to review their rules on Threatened sea turtles for the following reasons:

(1) Suriname and Reunion have submitted proposals to ranch (rear in a controlled environment specimens taken

from the wild) green sea turtles for consideration at the fourth regular meeting of the Conference of the Parties to CITES to be held in Botswana during April 1983 (47 FR 34043). If the Parties deem these populations to be no longer endangered and to benefit by ranching with the intention of trade, these populations could be transferred to Appendix II.

Species included in Appendix II may be traded internationally for commercial purposes provided that the Management Authority of the country of export issues an export permit. An export permit can be issued when the Scientific Authority of the country of export advises, among other things, that such export will not be detrimental to the survival of that species and the Management Authority of the country of export is satisfied that the specimen was not obtained in contravention of the laws of that country.

(2) Appendix I animal specimens which are "bred in captivity" for commercial purposes are deemed to be included in Appendix II according to Article VII.4 of CITES. This provision of Article VII was the subject of a resolution by the Parties to CITES in 1979. Questions have been raised by the government of the Cayman Islands and the United Kingdom Management Authority about the application of this resolution to certain Appendix I species, such as those with long generation periods. It has been proposed that this issue be discussed by the CITES Technical Experts Committee and that it be addressed at the Conference of the Parties in Botswana. Green sea turtles are among the species that could be affected by a resolution on this matter.

(3) On January 22, 1982, the Pacific Legal Foundation and the Association for Rational Environmental Alternatives filed a petition for rulemaking with the Services (47 FR 13917). The petitioners proposed implementation of a mariculture exemption from the trade prohibition for green sea turtle products by means of a permit provision in the regulations or a special rule.

(4) The Cayman Turtle Farm, Ltd. (CTF) has requested the Services to allow items from farm-produced turtles to accompany tourists back to the U.S., to allow farm products to be transshipped through the U.S. and to allow farm products to be imported into the U.S. for commercial purposes. During direct discussions between officials of the Cayman Islands and U.S. Government officials, and at hearings before the Subcommittee on Fisheries and Wildlife Conservation and the Environment of the Committee on

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

DEPARTMENT OF COMMERCE

National Marine Fisheries Service

50 CFR Parts 17 and 227

Review of Special Rules on Sea Turtles

AGENCIES: Fish and Wildlife Service, Interior and National Marine Fisheries Service, Commerce.

ACTION: Notice of intent.

SUMMARY: The Services have been requested to review the current ban on commercial U.S. trade for certain sea turtle species. An upcoming meeting of the Parties to the Convention on International Trade in Endangered Species (CITES) will consider whether certain populations of sea turtle should be traded for commercial purposes. In light of these activities, the Services hereby announce their intent to review Special Rule 50 CFR 17.42(b) and 50 CFR

1/22/83
Mailogram

money invested
unjustified
claims

declare "Ranch"
as a
Trade balance

Merchant Marine and Fisheries of the House of Representatives, the Cayman Islands Government gave assurances that it would prevent any further addition of wild sea turtles or eggs to CTF, and would impose a numbering and documentation system on traded items.

The purposes of this notice are to announce the Services' intent to reconsider allowing commercial import of maricultured sea turtle products into the United States and to invite comments on the topic. Also, the Services are requesting information on environmental and economic impacts and effects on small entities (including small businesses, small organizations and small governmental jurisdictions) that would result from any changes to the Special Rule, and information on possible alternative actions. This information will aid the Services in complying with the requirements of the

National Environmental Policy Act, Executive Order 12291 on Federal Regulation, and the Regulatory Flexibility Act, and in preparing any required analyses of effect.

List of Subjects

50 CFR Part 17

* Endangered and threatened species. Fish, Marine mammals, Plants (agriculture), Wildlife.

50 CFR Part 227

Endangered and threatened wildlife, Fisheries.

Dated: December 14, 1982.

G. Ray Arnett,

Assistant Secretary for Fish and Wildlife and Parks.

Dated: December 22, 1982.

William G. Gordon,

Assistant Administrator for Fisheries.

[FR Doc. 82-2219; Filed 12-30-82; 9:45 am]

BILLING CODE 4310-55-M

TO: Turtle Biologists/WATS Steering Committee
FROM: Dr. Peter R. Bacon
Zoology Department,
University of the West Indies,
Kingston, Jamaica

SUBJECT: JOB OPPORTUNITY FOR SEA TURTLE BIOLOGIST

I have been asked to find a suitable sea turtle biologist to be responsible for the biological and bio-technical aspects of a new Green Turtle farm .

- Required October 1983 to October 1986 (Three years)
- Location : Mauritius
- Farm details: 47 acre site; initial production about 1000 M/T per year; site capacity about 3000 M/T per year
- Laboratory facilities available
- Salary and conditions to be negotiated, but expected to compare with UN agency conditions for experts and consultants

I will provide further details on request, or please send a brief C.V. and contact address to me at the University of the West Indies.

Peter R. Bacon

Meat from Caymans being sold now

Importers hope to start turtle farm

By Kulani Mahikoa
Turtle meat as an abundant food source for the Pacific Basin is a long-range goal of turtle meat distributors Lee Mench and Henry Bush, who own Tropic Seas Foods, 697 Ahua St.

The importers have sights on starting a turtle farm in Hawaii, probably on Molokai, they say. "We're trying to generate interest for the farm from the state, but the first step is to get people accustomed to eating turtle meat," Bush said.

The partners are hoping that with the state's current interest in aquaculture the idea of a turtle farm in the

Islands will gain momentum and financial backing from the state.

Bush pointed out that the Green Sea turtle, which the distributors sell, has been a familiar food for island people throughout the world before it became an endangered species.

The Cayman Island Turtle farm in the Cayman Islands, from which the importers get their turtle meat, was started in 1968 as a conservation program to propagate the dying amphibian breed.

The potential of the farm was also seen as providing food for underdeveloped islands where people don't

have ready access to beef and depend on sea foods, Bush said. Subsequently, the farm began to breed the turtles for commercial use, he said.

"It's the only turtle farm like it in the world," Jackson said. Mench added that the farm breeds about 700,000 turtles a year and returns thousands of them back to the Caribbean Sea.

"In the ocean, only 3 out of 153 eggs survive. At the farm, 60 to 70 per cent of the eggs hatch because they're not subject to predatory creatures," Bush said.

Hawaii's climate and accessibility to the Pacific Basin islands make it an ideal spot for a turtle farm, Bush said.

But the first step in their grand plan — getting Hawaii residents accustomed to eating turtle — has been taken by offering the turtles in restaurants. Among clients are Territorial Tavern, Nick's Fishmarket, Little George's, Sanford's, The Sheraton Surfider, the Second Floor, the Fogcutter, the Proud Peacock, Haleiwa Sands, and

Sea View Inn. Cost of the turtle steak is high, comparable to the best cut of porterhouse or T-bone steak, Bush said. "By no means has it reached the commonality that beef or pork enjoy," Bush added.

The nutritional value of turtle is higher than either beef, pork or chicken, Bush pointed out. A meal-size portion of turtle meat contains 23 grams of protein, 2 grams of fat and 102 calories, compared with chicken that has 21 grams of protein, 12 grams of fat and 199 calories — or beef, that contains 19 grams of protein, 19 grams of fat, and 247 calories.

Immediate plans for expansion include stocking local grocery stores with turtle soups from the Cayman Island Turtle Farm. The soup will carry the brand name Poole's Turtle Soup and come in three varieties: chowder, bisque and bouillon.

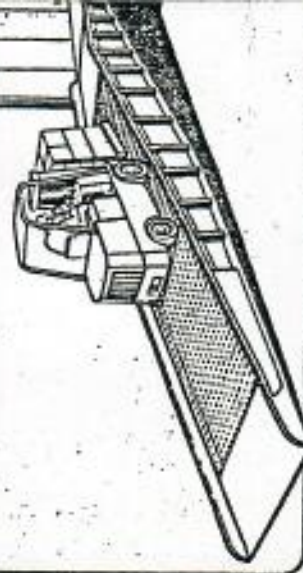
The partners are also making plans to sell their turtle filets over the counter at grocery stores.

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The Employer Suffers
The Honest Employee Suffers



Lee Mench shows off turtle meat and turtle soups his company Tropic Seas Foods distributes in the islands.

Wasano named chairman

TROPIC SEAS FOODS
Division of Tropic Seas Enterprises
677 Ahua Street
Honolulu, Hawaii 96819
Tel. (808) 833-2228

Customer information regarding farmed Turtle Products;

The incredible taste of turtle expertly prepared by your chef makes an excellent meal! In addition to its superb taste, Turtle is extremely high in protein, yet lower in calories than beef and fowl, plus there is virtually no cholesterol.

Turtle is one of the most highly demanded of the delicacy sea foods. Our Turtle comes from the Cayman Islands in the Caribbean Sea where it is Farm fed, Farm raised, and Farm prepared. As you may know, the Green Sea Turtle was nearing the endangered species list. Now, through the efforts of the Cayman Farm, the species is finally on an upswing. After maturity, a certain percentage of Turtles are returned to the sea. This percentage is far greater than those that could have lived in the wild. More important, the Green Sea Turtle of Hawaii has been benefiting by the Farm as well. Now that there is a continuous quality supply of Turtle products, from the Farm, and a strict licensing program by the State Department of Fish and Game, poaching has nearly been eliminated.

Any further questions regarding Turtle products sold in Hawaii, please feel free to call me.

Enjoy your meal

Mahalo,

(signed) Lee Mench

Transcribed from display sheet at
Fisherman's Wharf Restaurant
Honolulu, Hawaii

by G. H. Balazs
April 1978



MONITOR

THE CONSERVATION, ENVIRONMENTAL
AND ANIMAL WELFARE CONSORTIUM

1506 19th St., N.W.
Washington, D.C. 20036

(202) 234-6576

AGENDA - May 2, 1983

- 1) Federal Register Notices
- 2) Draft Letters
- 3) Information and Action Items

a) Dateline: Botswana. CITES Meeting: The Whales Won! Brydes Whales (Vote: 34-4), Minke Whales (Vote: 29-5) and Four Large Bottlenose Whales are on Appendix I. Now, all ten of the large whales are on Appendix I. Japan, Peru, Norway and USSR angrily threatened to file reservations on the whales.

U.S. Stopped on Bobcat! U.S. and Canada were forced to withdraw the bobcat issue in plenary and pleaded to interpret Appendix II as "look alike," not "threatened."

River Otter, Wolf, Grizzly: Downlistings were withdrawn by U.S. and Canada.

Cayman Islands Turtle was withdrawn in technical committee and did not reach plenary. Surinam Proposal (Green Sea Turtles) is on hold.

Seal Vote Lost: 27 to 23. But there was strong support of putting hooded seal on Appendix II, which may be a postal vote before next CITES meeting. This defeat is not crucial since the skin trade in seals with EEC nations is over.

b) Kangaroos: There will be a public hearing Monday, June 6, in the Main Building of the Interior Department, Room 8068, regarding the proposal to delist the three large species of Kangaroo. Australian conservationists will be flying in for this important hearing: Margery Wilson, Kangaroo Protection Co-operative; Peter Rawlinson, Scientist at La Trobe University; and Richard Jones, The Fund for Animals in Australia. For further information, contact Marian Newman of the Kangaroo Protection Foundation at (301) 229-5933.



Gulf oil spills into ecological disaster

MANAMA, Bahrain--The oil slick which has been growing in the Persian Gulf for the past three months now looks to be as much of a problem as the 2½-year-old war between Iran and Iraq which led to its creation.

Estimates of the oil spilled from the damaged wells of Iran's off-shore Nowruz Field vary widely, but most observers agree that no less than 200,000 barrels of heavy crude have gushed into the Gulf since January 27 when the spill began. Iraqi air strikes against other Iranian wells in early March seriously aggravated the situation; it is now thought that 3-5,000 barrels of crude oil are pouring into the Gulf every day.

Efforts to mediate something like a ceasefire between Iran and Iraq, which would permit capping the wells, have encountered one obstacle after another. In the meantime, Gulf countries whose desalination plants, industrial complexes and shorelines are threatened by the slick have been meeting in Kuwait, Saudi Arabia and Bahrain to try to map out strategy, technical if not political, to combat the slick.

Countries like Qatar and Bahrain which suffered previously from oil impaction have been the most vigorous in implementing policies to protect their vital installations against pollution. The United Arab Emirates, where volunteer squads have been mobilized for beach clean-up, is using the U.S. Coast Guard's sophisticated aerial detection system to monitor pollution in the vicinity of U.A.E. shores. For its part, Bahrain is protecting Manama's inner harbor with 400 meters of boom and installing permanent anchor points to keep booms in place around the Sitra desalination plant.

Slick Surveillance Spotty

Friction between Iran and its Arab neighbors has made surveillance of the slick's progress down the Gulf difficult. A lack of coordination among and within some of the Arab states has also impeded both monitoring and defensive measures. As a result, determining how much of the Gulf is already polluted, and how seriously, is a problem for which no global solution exists. Aerial and surface monitoring is localized, and the satellite imagery provided

by the U.S. National Oceanographic and Aeronautical Administration (NOAA), the only such long-range image sensing currently available to the Gulf states, lacks the resolution to prove conclusively where and how large the slick is.

Even though data are incomplete, enough is known about the slick to worry environmentalists, government officials and common citizens alike. Thin sheets of oil called sheen, interspersed with tar flakes, are widespread in areas of the Gulf adjacent to Bahrain, Qatar and Saudi Arabia. Tar balls in large numbers have washed ashore on beaches here and although, as of this writing, no mainland coastline has been seriously impacted, this is emphatically not the case with a number of small islands to the northwest of Bahrain.

Marine Animals Face Extinction

At least one of Saudi Arabia's east coast desalination plants has been closed down and the kingdom's fishing in the Gulf discontinued. Marine life is seriously affected although no conclusive evidence yet exists that the Nowruz spill caused the phenomena observed during April. Scientists say beaches are littered--much more than usual--with dead sea-dwellers, particularly air-breathing turtles, dolphins and sea snakes, the latter said to be dying in tens of thousands. Gloomier assessments of the destruction of marine life speak of a Gulf-wide extinction of some species including the dugong and hawksbill turtle.

The Nowruz spill is most unlikely to equal in volume that of Ixtoc 1, 1979-80, when approximately 3.5 million barrels of oil flowed into the Gulf of Mexico, but it is already generating worldwide concern. This rests, in part, on the apocrypha which have so far been published about it. But at least one eye witness has reliably reported seeing what must be spillology's equivalent of the Loch Ness Monster: Near the border between Saudi Arabian and Iranian territorial waters, he sighted tar mats, about 70 square meters in area and of approximately 2 centimeters in thickness, rising like tar islands in the Gulf and stretching "as far as the eye could see." Against such monsters of pollution, there is little defense short of heavy duty offshore equipment and complete cooperation, the likes of which do not exist here.

SPECIAL TO WER

FRIDAY MAY 4, 1983.

Los Angeles Times



Associated Press

Turtle jam—Green sea turtles crowd in holding tanks of turtle farm at West Bay, Grand Cayman. Farm each year produces about 6,000 turtles for food and other purposes. Green turtle is on endangered list and the products are banned in United States.

July 16, 1981

THE WALL STREET JOURNAL

*Turtles in the Soup
On Caribbean Island
Will Try Luck at Sea*

They Were Raised for Meat,
But U.S. Ban on Imports
Causes Big 'Farm Surplus'

By JANET GUYON

Staff Reporter of THE WALL STREET JOURNAL
GRAND CAYMAN ISLAND—Sometime during Pirates Week, an annual holiday put on for tourists here each October, thousands of young green sea turtles will escape the knife of the slaughterhouse and swim to freedom in the turquoise waters surrounding this tiny Caribbean island.

The turtles owe their lives to Cayman Turtle Farm Ltd., which really would rather



be serving them up to gourmets. But thanks to conservationist fervor in the U.S., the farm—which claims to be the only true commercial turtle farm in the world—is forced to spare the turtles because it can't find enough customers for turtle steaks. And therein lies a tale of communism, environmentalists, turtle soup and a German tan-

pon baron.

"It's a terrible, deplorable dilemma," says Archie Carr, a well-known turtle zoologist at the University of Florida and no friend of turtle farms. "But they brought this on themselves."

Christopher Columbus first named the Cayman Islands Las Tortugas (the turtles) in 1503 because turtles in the surrounding sea were so abundant. They looked like little bobbing rocks. And the buccaneers of the 17th Century prized the sweet, tender meat of the turtle as well as its unusual ability to survive aboard ship. Kept wet on its back in a boat so it won't skitter away, a turtle can live for two months off its own fat, providing a source of fresh meat at sea.

European sailing ships used to haul turtles from Cayman to London, leading to the development of clear turtle soup with sherry, a broth that became a favorite of Winston Churchill—who himself ran afoul of turtle protectors.

Mr. Churchill used to drink a cup of turtle broth every night before bed, says Mr. Carr, and he loved it so much that when the Caribbean Conservation Corp. pleaded with him in the 1950s to break his habit as an example to the world of concern for the turtles' welfare, Sir Winston refused. "His secretary said it would give him more suffering than anyone else in the world," Mr. Carr says, "and we should get somebody else to quit drinking it."

This sort of devoted appetite for turtle eventually depleted the Caribbean waters of green sea turtle (*Chelonia mydas*) and got it listed by the U.S. Departments of Commerce and the Interior as a threatened species under the U.S. Endangered Species Act. But Caymanians still adore turtle, especially when its meat, lungs, flippers and liver are combined in a rich stew. The British colony



even honors the reptile with a turtle emblem on its official seal, its flag and its airline.

So Caymanians were ecstatic when a group of British and American investors established a turtle farm here in 1968. The investors hoped turtle meat might become a staple of fast-food places and a popular substitute for chicken. Scientists say turtle is about 15% protein and only 1% fat. And an adult turtle, which can weigh as much as 600 pounds, can provide as much as 100 pounds of meat. The Cayman farm kills its

Please Turn to Page 21, Column 1

Turtles in the Soup On Caribbean Island Will Try Luck at Sea

Continued From First Page

turtles when they are three or four years old and weigh 50 pounds.

The farm, however, ran into financial difficulty, mostly because it was built in a salt creek that didn't flush out turtle wastes fast enough, says James Wood, the head of the farm's research. In 1975, the company went into receivership, and domestic turtle farming might have ended then and there but for Heinz Mittag, a wealthy German industrialist. Mr. Mittag, who had sold his share of a tampon-making company to Johnson & Johnson in the mid-1970s, bought into the farm in 1976, as did the Cayman Islands government.

Mr. Mittag pumped several million dollars into the farm, which moved from its salt creek to a series of land-based tanks of concrete and glass fiber. Things went swimmingly until U.S. environmentalists objected to the wisdom of farming turtles and to the import of turtle meat, shell, oil, leather and soup into the U.S. (Wild-turtle imports already were banned.)

"We had people saying we laundered wild meat," says an incredulous Joshua Brown, the manager of operations at the farm.

After five years of heated debate, the U.S. finally banned the import and shipment of the farm's products in May 1979, effectively eliminating two-thirds of the farm's market and dashing hopes for a profit. "What the Americans did to us was bloody nasty," says Dennis Foster, the chief secretary of the islands' government.

Now the plight of the farm has become something of a cause célèbre. Because of the ban, the farm had to curtail operations,

and last year it got stuck with 300,000 pounds of excess slaughtered turtle meat.

At this point, the turtle debate became ideological. Some sympathetic U.S. officials, like Sen. Roger Jepsen, the Republican of Iowa, believe the farm should be allowed to export turtle to the U.S. as a means of encouraging a capitalist philosophy in the Caribbean. "Here we are in the middle of a sea of (Cuban) communism, and the U.S. is effectively cutting out the only exporter of the Cayman Islands," says Mr. Brown, a native Californian who says he's sympathetic to conservationist causes. The turtle issue also involves Cayman economics. At one point, the farm employed 100 persons, or 2% of the islands' working population.

Conservationists brush these geopolitical arguments aside. They argue that sea turtles of all types are listed as threatened and that, therefore, none should be imported. Turtle zoologists like Mr. Carr believe that allowing trade in farmed turtle meat will encourage poaching of wild turtles because the farmed meat will create a world appetite for turtle that the farm won't be able to satisfy. Before the U.S. ban, Mr. Carr says, poaching throughout the Caribbean was growing.

Some environmentalists say the farm is helping to delete the wild population by taking wild turtles for breeding.

Invited, at a recent international conservation conference, a Nicaraguan representative accused the Caymanians of taking turtles off Nicaraguan shores for use at the farm, according to Michael Bean of the Environmental Defense Fund.

The Wild Ones

"I wouldn't deny that there is the occasional boatload of turtles brought into Cayman illegally," says the farm's Mr. Wood, "but they don't show up on the farm." He says the farm hasn't taken eggs from the wild since 1978 and hasn't taken wild turtles for breeding since 1977. (The wild breeders are much more prolific than the farm-bred breeders, he says, because the farm turtles "just haven't gotten their reproductive act

together yet.")

Further, muddying the waters is the average Caymanian's unabashed preference for wild-turtle meat over farm-turtle meat. Even Mr. Foster, the chief secretary, confesses to preferring seagoing turtle. Most restaurants in Cayman serve the farmed variety, which, smothered in onions, tomatoes and fried peppers, tastes like a slab of coarse, tough veal. Wild turtle, however, tends to be much tastier—resembling a juicy, gummy cross between pheasant and filet mignon.

Because of their preference for wild meat, Caymanians acknowledge that poaching in the waters off Nicaragua—where turtles still are relatively plentiful—does take place. In fact, the Caymanian government is said to be so miffed at the U.S. import ban that it turns its back on poached turtle coming in through Georgetown on Grand Cayman.

The controversy doesn't help the farm, and even the planned release of the 10,000 turtles is causing a stir. The farm wants some big American corporation or interest group to sponsor the release, but environmentalists don't like this scheme either.

Protecting Species Purly

They say that because the farm's turtles are descended from turtles in Costa Rica, Surinam, Guyana, Nicaragua and Ascension Island, their release will destroy the turtle gene pools of the Caribbean. "It's a pain in the neck to think someone would upset the natural strains," says Mr. Carr, an advocate of species purly among turtles.

Furthermore, "scientists are concerned that those turtles will not know how to behave in the wild," says Mr. Bean of the Environmental Defense Fund. Experts seem particularly concerned over how the turtles will return to their birthplace for the traditional egg-laying, because they would have to do a lot of wall-climbing and such.

Meanwhile, the 8,600 turtles still down on the farm seem happy enough, swimming about in their concrete tubs and eating their

high-protein animal feed. No one knows yet how this soft living affects the life span of sea turtles, which are believed to have been around since dinosaur days and are thought to live to be at least 100 years old.

Nesting season is just beginning on the artificial beach here at the farm. Eggs are collected as they are laid and placed in Styrofoam chests to keep them warm. Mr. Wood expects his turtles to produce about 17,000 little hatchlings this summer.

And by fall, he should be awash in a sea of turtles he can't afford to feed. "We spend \$1 million a year just on feed," he says. Now, for \$5, tourists can come to the farm, pick out a tagged turtle and let it go.

"We can't afford to keep them because of the economic considerations of the market," says Mr. Wood. "It's better to release turtles than to hit them on the head and throw them in the trash."

Japanese officials meet here

THE DAILY CAYMANIAN (Cayman Islands)

COMPASS

PUBLISHED MONDAY - FRIDAY

MONDAY 23 AUGUST 1962

Cayman last week between Government officials and a team of Japanese businessmen who are interested in starting a turtle farm in Japan.

The Japanese businessmen, who have already visited parts of Central and South America to gain information on the commercial farming of turtles, visited Cayman to make inquiries into the feasibility of starting a farm to be run similarly to Cayman Turtle Farm.

The men are members of a Japanese trade association — made up of companies involved in Japan's leather industry — called the All Japan Association of Reptile Skin and Leather Industries.

The mission is being supported by the Japanese Ministry of International Trade and Industry as well as the Metropolitan Toyko Government.

Late 1980 the Japanese Government ratified the Convention on International Trade in Endangered Species (CITES), the international treaty that seeks to protect endangered species of flora and fauna by regulating trade between nations in those commodities.

While ratification of the treaty by a nation obligates that nation to prohibit as illegal importation of animals listed in the treaty as endangered — such as the Green Sea Turtle — the Japanese sought and were granted an exception, which allowed them to trade for a temporary period in nine types of endangered species.

All the companies in Japan engaged in the leather trade import 100 per cent of the reptile skins that they process.

This means that by late 1985 the Japanese will have to produce the reptile skins they need through domestic farming or go out of that business altogether.

The leader of the group, Mr. Shigeo Ikegami, chairman of the trade association and his party last week toured the Cayman Turtle Farm with farm director Mr. Jim Wood, and also met with Mr. Kearney Gomet, principal secretary in the portfolio of Agriculture, Lands and Natural Resources.



Turtle Trouble On Grand Cayman

*Visions of turtle burgers, tourists and profits have kept alive
a Caribbean enterprise deplored by many conservationists*

by Michael Bean

APPROACHING Grand Cayman Island from the air, one looks down into the iridescent blue of the Caribbean to vast beds of turtle grass where green sea turtles once fed in the tens of thousands.

When Columbus sighted these islands in 1503, he named them "Las Tortugas" because of the abundance of turtles in their surrounding waters. Now, though there are virtually no turtles in these waters, thousands can be found on Grand Cayman. They came from as far away as Suriname, Costa Rica, Nicaragua and Ascension Island, and they will never know

the sea again. When they leave Grand Cayman, they will do so as bracelets, wall ornaments, soup and stuffed curios packed in crates marked "Cayman Turtle Farm." The story of that farm is one of the most bitter, emotionally charged international controversies in conservation today.

The Cayman Islands are an unlikely setting for such controversy. Roughly 480 miles south of Miami, the islands have been a British colony since the 17th century. Their per capita gross national product is the highest of any country in the Caribbean. The "lesser islands," Cay-

man Brac and Little Cayman, are virtually uninhabited. Regular air service to the main island of Grand Cayman began as recently as the 1950s. The islands' glistening beaches and quiet, dusty roads attract tourists seeking respite from the North's cold winter.

The sleepy island atmosphere is betrayed only by the abundance of banks, one for every 55 inhabitants of the Cayman Islands. Ninety percent of those banks do only foreign business because of strict bank secrecy laws that make Cayman Islands the Switzerland of the Caribbean. For the

tourist uninterested in international banking intrigue, there are the sun, the sand, the surf and, at the northwestern end of Grand Cayman, the Cayman Turtle Farm.

A visit to the farm is part of the itinerary of nearly all of the 120,000 tourists who visit the Caymans each year, three-fourths of them from the United States. For \$3.50 a tourist can wander past tank after tank choked with green sea turtles, one of only seven sea turtle species, six of which are threatened or endangered. Diesel-fueled pumps circulate ocean water through the tanks each hour while farm staff cast food pellets on the water surface to feed the hungry turtles. A few small tanks house other turtle species, including the giant leatherback and the beautiful hawksbill. These, however, are for visitor viewing only and are not part of the farm's vast production process. The last stop on the farm tour is the gift shop. There, tourists may choose from a vast array of turtle-based souvenirs, including polished shell jewelry, oil, hand cream, soap and dozens of other items.

Cayman Turtle Farm is the current name of an enterprise started in 1964 by one of the island's most influential families. Four years later British and American investors formed Mariculture, Ltd., as corporate owner. This was intended to be the world's first commercial turtle farm, where green sea turtles would be bred in captivity, then slaughtered and sold to markets in Europe, the United States, Japan and elsewhere. Its founders envisioned the farm on Grand Cayman as the first of many around the world. They sought to attract investors with a "Colonel Sanders" vision of the future in which "turtle burgers" would vie with Big Macs and Kentucky Fried Chicken for the palates of American motorists. To accomplish this, Mariculture, Ltd., imported more than 378,000 eggs and nearly 100 wild adult sea turtles from Suriname, Costa Rica, Nicaragua and Ascension Island. In 1975, however, Mariculture, Ltd., went bankrupt.

For a time it appeared that the farm's financial misfortune might cause it to vanish from sight like a turtle slipping quietly into the sea. Before that could happen, however, the enterprise was rescued in 1976 by new investors, chief among them a wealthy couple from

Germany, Judith Mittag, a physician said to have invented the tampon, and her husband Heinz, a lawyer. The Mittags renamed the enterprise Cayman Turtle Farm and moved it from Governor Creek to a series of land-based concrete and fiberglass tanks at Goat Rock. Over the next three years, the farm imported another 91,000 eggs and 117 adults. By August 1978 there were 63,000 sea turtles swimming in the tanks at Goat Rock, and exportation of meat, soup, jewelry and furniture, primarily to the United States, was expanding.

Meanwhile, the Mittags set about trying to persuade the world that international commercial trade in farmed turtle products was not only good business but good for turtles. In meetings with a panel of scientists from the International Union for Conservation of Nature and Natural Resources (IUCN) in 1975, the farm's research manager, Dr. James R. Wood, presented a plan for becoming independent of wild populations of sea turtles, or "self-sufficient," by 1980. This plan was meant to counter growing criticism that the farm would have to depend upon wild sea turtles in order to meet its production goals.

Farm officials argued that a steady supply of farmed products would meet, at least in part, a world demand that otherwise could only be satisfied by wild turtles. They even offered the possibility that turtles from Cayman Turtle Farm might someday be used for restocking depleted wild populations. Some members of the scientific and conservation communities were persuaded by this argument. Others were not.

The farm's skeptics have a variety of concerns. First, they point out that in nature, the green sea turtle is a vegetarian nearly all its life, feeding on sea grasses. The captive turtles at Cayman Turtle Farm, on the other hand, are fed imported, pelletized protein. Water in their tanks is circulated by diesel-powered pumps. Though skeptics like Rutgers University's David Ehrenfeld share the desire to find "protein to feed a hungry world," they argue that this protein could be supplied without such an enormous expenditure of resources if wild turtles were properly conserved and managed.

A second set of concerns voiced by, among others, the dean of sea turtle scientists, Dr. Archie Carr, Jr., of the University of Florida, and the University of Hawaii's George Balazs, directly challenges the argument that trade in farmed products will lessen pressure on wild turtles. They contend that marketing efforts of sellers and advertisers have more to do with consumer demand than do the innate desires of buyers. The farm and its retail customers already have employed advertising and marketing campaigns to stimulate demand. Mariculture, Ltd., published a booklet about the farm entitled "New Hope for the Green Sea Turtle." It was withdrawn after protests from conservationists about its accuracy, but it later was translated and republished by a Japanese fishing center. Since Japan is a major market for sea turtle products, Balazs views with alarm the republication of a book he labels "a classic in deceit."

A well-known Honolulu restaurant once enticed its customers with the assertion: "As you may know, the Green Sea Turtle



Three-year-old green sea turtles, a threatened species, crowd a tank at the Cayman Turtle Farm, where they are raised for meat and products such as the jewelry, right, on display at the farm.

Michael Weber/CEE

was nearing the endangered species list. Now, through the efforts of the Cayman Farm, the species is finally on the upswing."

The very availability of farmed turtle products could stimulate demand, farm critics warn. Thousands of tourists returning home with shell jewelry and curios could help fuel an appetite for such items. Carr's concern on this score was driven home when he found green turtle soup on the shelves of a Des Moines, Iowa, supermarket. As early as a decade ago he wrote that the Cayman venture, "after promising to flood markets, is now doing just the reverse—purveying turtle meat through American supermarkets to housewives who never saw it before and injecting new vigor into previously undersupplied markets for oil, calipee, skins and green turtle shells." (Calipee, a jelly-like substance found over a turtle's lower shell, is the basis of turtle soup.)

Supporters of the farm, among them Simon Townson of the British Herpetological Society, have rejected the fears about increased demand as theoretical

and unconvincing. Yet when a small-scale turtle farm was launched in Australia in the early 1970s, even those closely associated with it saw it as increasing pressure on wild sea turtle populations.

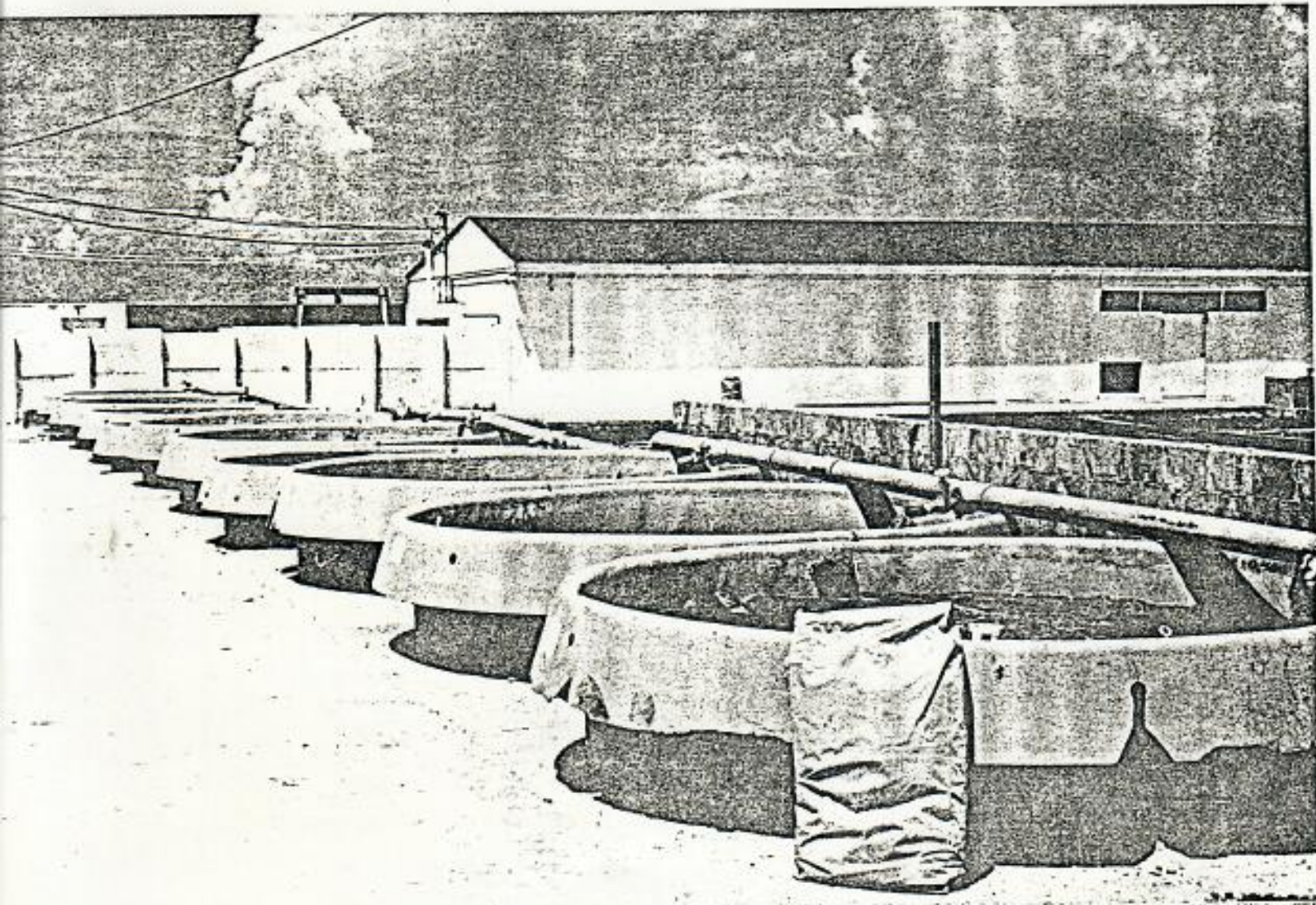
Third, some scientists, including Carr, say release of Cayman farm stock could harm Caribbean turtle populations because farm turtles represent a genetic mixture of turtles from around the world. This could lead to subtle changes in the offspring of these turtles.

Anticipating the argument that international commercial trade in farmed turtle products might actually increase pressure on wild turtles, the farm supported research by the University of Arizona's J.R. Hendrickson to develop a means of distinguishing its products from products of wild turtles. Hendrickson developed a chemical test that apparently could do this, thanks to the artificial diet fed captive turtles. The farm widely touted the technique as a foolproof way of establishing the origin of shell products. But in a report to the U.S. Fish and Wildlife Ser-

vice following more extensive testing, Hendrickson concluded that the method did not work.

Without other means to recognize genuine farmed products, labeling and documentation requirements are the only safeguard against passing off wild turtle products as farmed products. Kenneth Berlin, who formerly headed the U.S. Justice Department's special unit to enforce wildlife conservation laws, asserts that there is widespread illegal wildlife trade under false documentation and that existing enforcement efforts touch only a tiny portion of it. Nevertheless, the farm argues that reasonable enforcement efforts should be sufficient to prevent others from claiming that their turtles are from Cayman Turtle Farm.

The way the farm conducts its business also has disturbed conservationists. A substantial proportion of the foreign tourists who visit the farm are from the United States. It is illegal for them to bring back turtle products. No signs in the farm gift shop warn tourists that their purchases



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Photographs by Barbara K. Strong



Tanks for one- and two-year-old turtles flank the slaughterhouse. Turtles are butchered at about three and a half years. Signs at the farm's gift shop urge buying turtle products but do not warn of a United States ban on such goods.

may be seized upon their reentering the United States. Only if a tourist asks will shop personnel advise him about the United States restrictions, and then they sometimes suggest buying something small that can be concealed in a pocket.

Perhaps the most sensitive issue is the possibility of fraud by the farm itself. A massive die-off of hatchlings in 1977 and 1978 left the farm with about 3,000 turtles to meet its marketing needs in 1980 and

1981, when those turtles reached marketable size. In early 1980 reports emanated from Nicaragua that a Caymanian interest had approached the new government of Nicaragua for authorization to purchase some 1,000 adult green sea turtles. At about the same time, Carr began receiving reports that coastal villagers in Colombia were gathering turtle shell to sell to "a man from Cayman." Most dramatically, in March 1981 the representative of Nicaragua at the meeting of the parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) charged that Nicaraguan turtles were being illegally taken to supply a farm on Grand Cayman. The Cayman government claims these charges were "fabricated by the Nicaraguan authorities."

A related area of concern is the ability of the farm to become truly independent of wild turtle populations. The 1975 plan explained by Wood to the IUCN turtle specialists called for ending the farm's dependence on wild-caught adult turtles by 1980. The actuality has been quite different. Though the farm has succeeded in having wild-caught adult turtles mate and produce offspring, it has had very little breeding success with turtles brought to the farm as eggs. In 1975 the first egg-laying by farm-reared turtles produced only 199 hatchlings. During the next two years, only 75 more were produced. Appreciably more were hatched in 1978, but a year later more than 85 percent of them were dead. Fewer than 350 of the hatchlings born to farm-reared turtles in 1979 were still alive in mid-1980. This was less than three percent of the number originally projected by Wood; 1981 and

1982 were even worse, with more than 99 percent of the eggs laid by farm-reared turtles failing to hatch. Moreover, from 1977 to 1981 the fertility of the eggs laid by the wild-caught adults also slipped from 60 percent to 20 percent. Thus the farm is woefully behind its projections. If these low hatching and survival rates continue, the farm will have to depend almost entirely on production by wild-caught adult turtles.

The green sea turtle is protected under Appendix I of CITES. That treaty, to which some 70 nations subscribe, provides for the control of international trade in endangered species. Appendix I is reserved for the most endangered species. Normally, international commercial trade in Appendix I species is prohibited. However, CITES does allow regulated trade in specimens of Appendix I animals "bred in captivity for commercial purposes." This classification, restrictively defined by the CITES parties in 1979, includes only specimens born in captivity to parents that mated in captivity, and then only if the breeding program is capable of reliably producing at least two generations in captivity.

Cayman Turtle Farm may never meet this definition. Yet the Cayman Islands government continues to authorize commercial trade in the farm's products by issuing CITES documents certifying that those products are from turtles "bred in captivity." Many importing nations accept these documents because, under CITES, it is the responsibility of exporting nations to determine whether an enterprise meets the requirements for captive breeding.

This does not mean that trade in turtle products is uncontrolled. In 1978, the United States decided, under its Endangered Species Act, to prohibit the importation of all green sea turtle products, farmed or otherwise. This action culminated a nearly four-year proceeding before the Commerce and Interior Departments. The farm immediately filed suit to overturn the decision. Defenders of Wildlife and other conservation groups, represented by the Environmental Defense Fund, intervened in support of the challenged ban. After reviewing the most thoroughgoing administrative record compiled under the Endangered Species Act, the court concluded that the evidence amply supported the determination of the two departments that continued trade in farm products was likely to threaten wild turtle populations.

Having failed to persuade the courts to overrule the two federal agencies, the

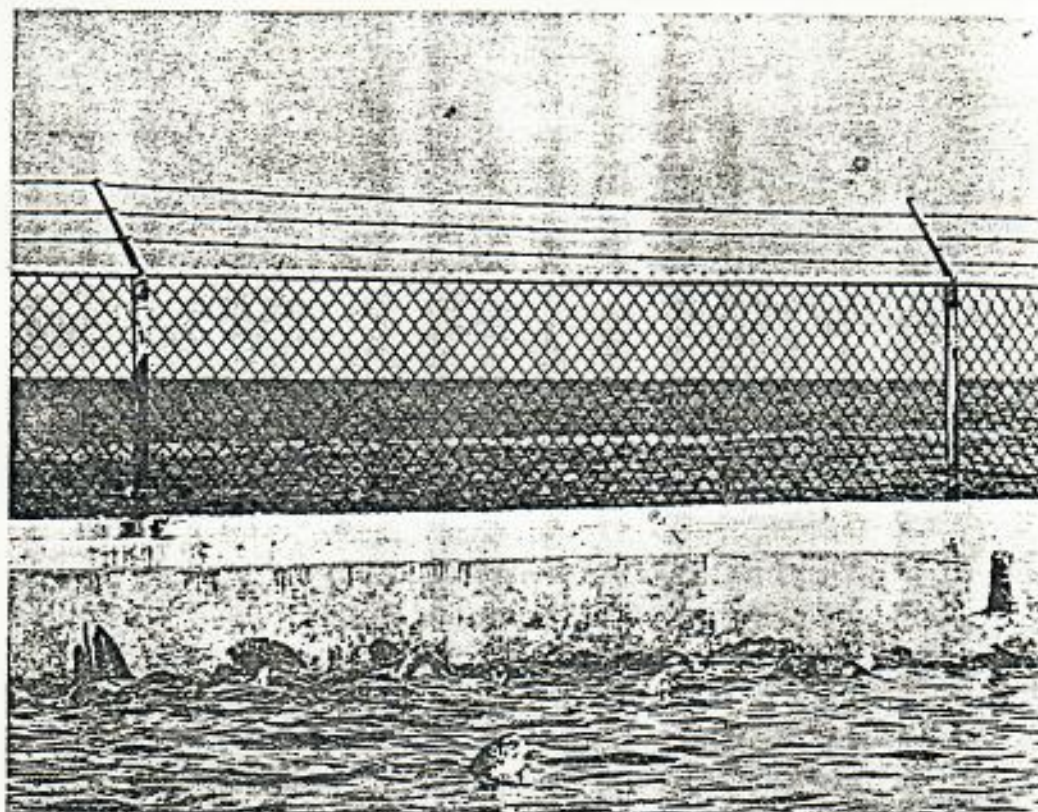
farm enlisted the aid of political allies in Congress. One surprising friend proved to be the "New Right" Republican senator from Iowa, Roger Jepsen. Jepsen called in top federal bureaucrats responsible for closing the United States market to the farm and berated them for their action. He contended that the decision would put Caymanians out of work and drive the country into the arms of communism, "like Cuba and Jamaica." The senator's effort fizzled, but the farm has continued to seek an end to the ban.

In January 1982 the Pacific Legal Foundation, the organization upon which James Watt's Mountain States Legal Foundation was patterned, petitioned Interior and Commerce to lift the ban, arguing that by "producing captive-bred stocks, farming would help to satisfy the demand for turtles and thus relieve the commercial pressure on wild turtles." Although this reasoning had been rebuffed by the two departments under the Carter administration, it proved attractive to officials of the Reagan administration. This reasoning also made the farm into a cause celebre for advocates of free-market approaches to the conservation of endangered and threatened wildlife.

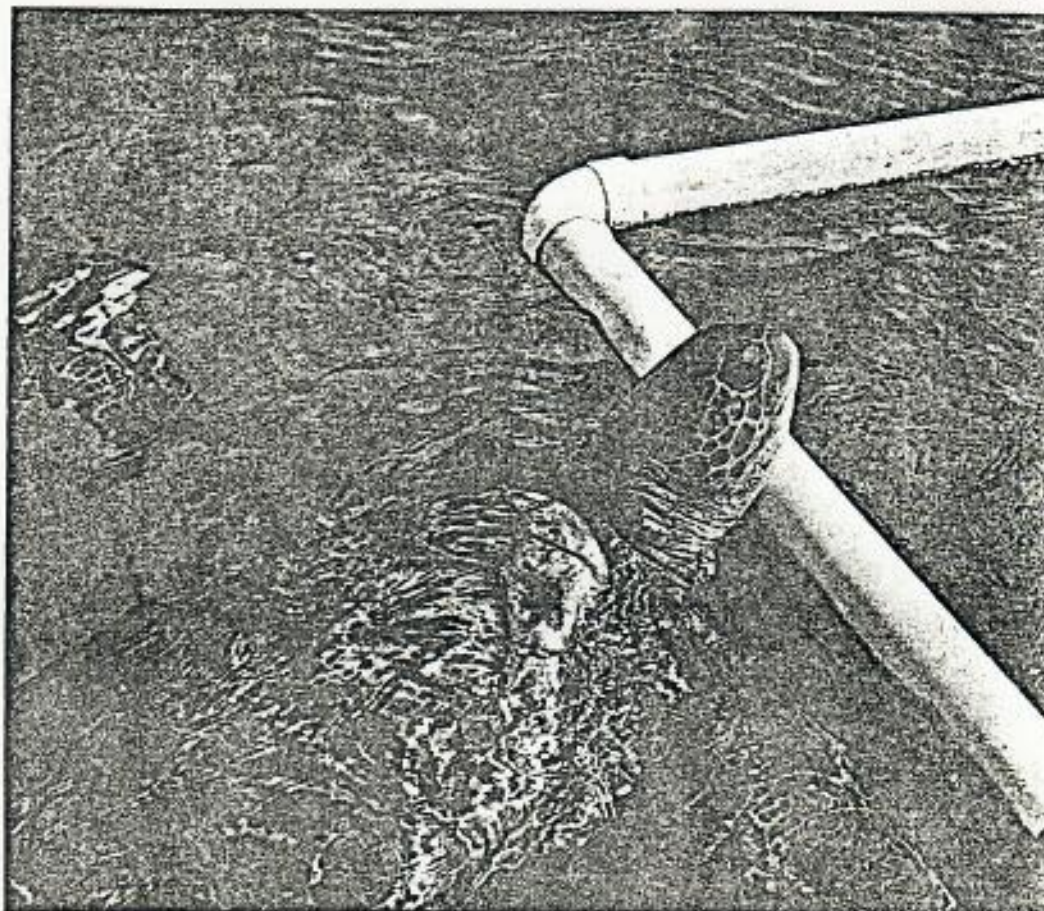
Although the petition repeated the farm's theories about trade in endangered or threatened wildlife, it presented no new evidence regarding the issues which in 1978 the departments had regarded as critical. In particular, it offered no basis for getting around the tough requirements of CITES. The ban's opponents then sought more help. Thanks to the influence of the governments of the Cayman Islands and the United Kingdom and a \$100,000 kitty to pay-for professional lobbyists, congressional interest was stirred. Citing successful trade in farmed American alligators, the farm's representatives convinced the chairman of the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, Representative John Breaux (D-Louisiana), that the entire issue required a congressional inquiry. So last fall, representatives of the committee and the two departments went to the Caymans to inspect the farm's operations.

The farm apparently impressed the official visitors. A committee hearing in October heard supportive testimony from the farm, the Cayman government, the Pacific Legal Foundation and other farm backers.

G. Ray Arnett, Assistant Secretary of the Interior for Fish and Wildlife and Parks, and James Winchester, associate administrator of the National Oceanic and Atmospheric Administration, seemed



Barbara K. Strong



Michael Weber/CEE

They may hear waves splashing, but these green sea turtles are destined to swim in nothing larger than a farm tank. Breeders like the large turtle above are supposed to provide the farm with stock. But many turtles hatched from wild eggs are thought to find their way into the farm's hatchling tanks at right.

predisposed toward the farm's case. Winchester testified: "Although the farm is a valuable research facility, it cannot continue to operate commercially without further markets for turtle products." Arnett and Winchester joined farm representatives in attempting to overcome concerns raised by conservationists that importation of farm products would create enforcement difficulties.

In the end, three members of the Committee on Merchant Marine and Fisheries sent a letter to Commerce and Interior urging the departments to lift the ban. To do that, however, Commerce and Interior need to persuade the CITES parties to relax their definition of "bred in captivity." The next opportunity to do that will come in April when the CITES parties meet in Botswana.

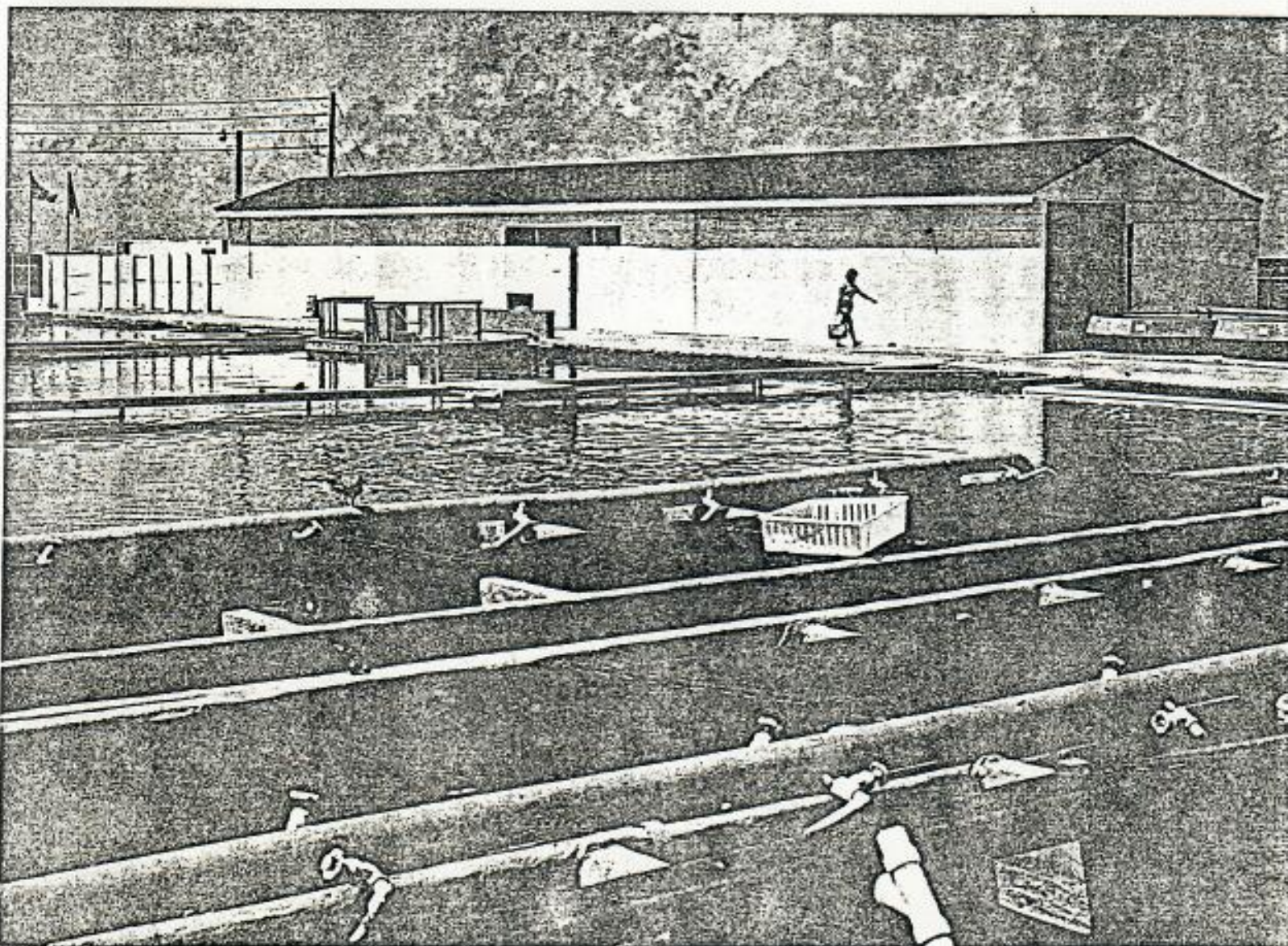
If the CITES parties can be persuaded to relax the requirements of the "bred in captivity" definition, the United States will reverse the decision it made in 1978

and successfully defended in court and will once again open its markets to Cayman Turtle Farm products. Thus, the farm's allies in the Reagan administration are working feverishly in close cooperation with Great Britain on a proposal to do just that.

Not content to pursue the new mutual interest in sea turtles with Great Britain, however, the United States would like to exact a concession from the British. That concession is Britain's help in getting the bobcat removed from CITES protection. That may be a particularly painful request of the British, however, since they were responsible for the bobcat's listing under CITES in the first place. Nonetheless, a recent Interior Department option paper, in assessing Britain's strong interest in the Cayman Turtle Farm, advised that "this situation offers us one of the few opportunities we have had in recent years for some leverage with the United Kingdom, which should not be wasted."

As the April meeting of the CITES nations approaches, conservationists, scientists, lobbyists and governments are marshalling forces for yet another round in the Cayman Turtle Farm controversy. Whatever the CITES parties decide in April regarding the farm may significantly affect efforts to curtail exploitive international commerce in endangered and threatened species. The Reagan administration's behavior at the CITES meeting and its review of the import ban after the meeting will also affect this nation's progress in halting the steady slide of the world's sea turtles toward extinction.

Michael Bean, chairman of the Environmental Defense Fund's wildlife program, served as attorney for Defenders of Wildlife and other groups that successfully opposed the Cayman Turtle Farm's 1978 court effort to nullify the United States' turtle import ban.



Michael Weber CEE

Defenders

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February/March/
April 1983

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COVER: Two mountain gorillas, five-year-old Poppy, left, and her three-year-old cousin Cantsbee, sit amid the dense foliage of central Africa's Virunga Volcano rainforest in this photograph by Peter Veit. The article on page 20 tells about the effects of poaching and farming on the gorillas. Opposite: New Jersey biologists have outfitted this snared black bear with ear tags, streamers and a radio collar as part of a study of the state's growing bear population. Radio signals are used to track bear movements. See John McPhee's "A Textbook Place for Bears," page 2. Photo from Division of Fish, Game and Wildlife.

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THE INFLUENCE OF TEMPERATURE ON THE INCUBATION OF BOX TURTLE EGGS. G. H. Dodge, M. T. Diamond and C. C. Wunder. Library of Congress, Trinity College (Washington, D. C.), and University of Iowa, Iowa City, Iowa.

Over the past eight years, research has been conducted on eggs and newly hatched young of eastern box turtles (Terrapene carolina carolina Linne). Eggs were incubated at temperatures ranging from 24°C to 34°C. Eggs incubated at 24, 30, and 32°C have mean incubation times of 60, 52, and 54 days respectively. Eggs incubated at 34°C failed to hatch. Hatching growth from eggs incubated at 24 and 30°C is nearly equivalent and is nearly four times faster than normal. A temperature of 30°C appears to be optimal both for incubation of eggs and development of the hatchling. However, hatchlings reared under laboratory conditions do not appear to adapt well to field conditions. Therefore, different approaches to head-starting hatchling box turtles are being examined.

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THE THERMAL BIOLOGY OF HAWAIIAN BASKING GREEN TURTLES (Chelonia mydas). G. C. Whitlow and D. H. Balazs.* P.B.R.C. Kewalo Marine Laboratory and the Hawaii Institute of Marine Biology, University of Hawaii, Honolulu, Hawaii.

Observations were made on green turtles basking on the white sand beaches at French Frigate Shoals in the Northwestern Hawaiian Islands. The highest rectal temperature recorded from the basking turtles was 31.30°C, but the surface temperature of the carapace attained values as great as 42°C. During basking, the turtles flipped sand onto their carapaces but they did not seem to orientate their position in relation to that of the sun. The duration of basking appeared to be inversely related to the mean black-globe temperature, and the basking beaches were relatively cool. The pattern of breathing during basking consisted of periods of breath-holding (\bar{x} = 219 sec) alternating with single breaths. Among the advantages which might accrue to Hawaiian sea turtles from their unique basking behavior, evasion of tiger sharks, their main predator, may be important.

This study was supported by a grant from the National Geographic Society.

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SEX DIFFERENTIATION AND INCUBATION TEMPERATURE IN TURTLES. M. T. Diamond. Trinity College, Washington, DC.

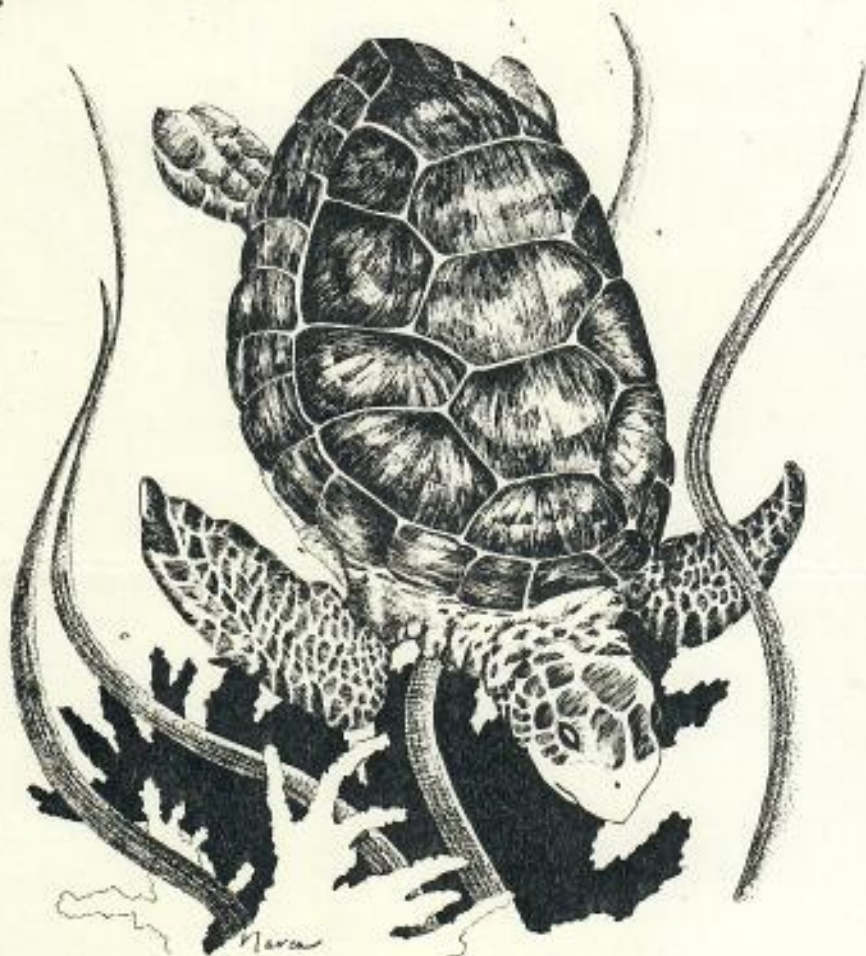
Eggs from Chrysemys picta picta and Chelydra serpentina were incubated at constant temperatures of 28.5° or 31° C. Gross examination of gonads and gonoducts revealed no males at either temperature for C. p. picta. Chelydra serpentina, however, produced both sexes at the lower temperature; out of five hatchlings at 31° C, four were females and one, an "intersex," thus supporting Yntema's findings with that species. The temperature of natural nests of Terrapene carolina carolina eggs has been monitored during the unusually cool summer of 1979. The sex of the hatchlings will be reported. There are apparently species-specific critical temperatures for sex differentiation in turtles.

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TELEMETRY OF MOVEMENT AND BODY TEMPERATURE DATA FROM GREEN TURTLES, CHELONIA MYDAS, AT TORTUGUERO, COSTA RICA. Edward A. Standora*, James R. Spotila and Robert E. Foley. Univ. of Georgia, Savannah River Ecology Laboratory, Aiken, SC 29801 and State Univ. College at Buffalo, NY 14222.

Five adult female turtles were outfitted with both 164 MHz radio transmitters and 40 KHz multichannel sonic transmitters. The radio transmitters which were embedded in a float were attached to the animals by means of a 20m tether equipped with a corrodable breakaway link. With these transmitters it was possible to "home in" on individuals at distances in excess of 10 km. The temperature sensing sonic transmitters which were attached directly to the carapace could be detected at more than 3km. Thermistors were positioned at the external and internal surfaces of the carapace and plastron, adjacent to the liver, and above the carapace surface for water or air temperature. Temperature data were encoded as pulse rate and were recorded in the field and later decoded and graphed by computer. Data were obtained from free-swimming turtles and turtles exercised on the bench during the day and at night. The maximum deep body temperature recorded for a swimming individual was 37.1°C; this was 8.0°C above water temperature.

Be a Part of
A DAY
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See Page 33.



The Ancient Mariner

When Columbus arrived at Grand Cayman Island, he called the place *Las Tortugas*, for the teeming masses of turtles that inhabited its shores. Sadly, few turtles remain there today, or anywhere in the seas.

Turtles are among the oldest living animals — having survived for tens of millions of years. Yet, in the brief (for the turtles) five hundred years since Columbus arrived in the New World, turtles have almost disappeared. Occasional traces of this ancient mariner survive as a bracelet on your neighbor's wrist or as a gourmet item at expensive restaurants. Man's self-indulgence has endangered the turtle, even more than eons of shifting continents and raging oceans.

United States law prohibits the importation of sea turtle products — and yet an estimated 80 percent of the market for those products is here. How could this be? In a few cases it's just ignorance of the law. But in some South American countries, commercial turtle farms secretly encourage trade in endangered sea turtles. They offer a "safe" market for illegal poachers, and then sell the products to unknowing Americans. **Too often, U.S. travelers return home with turtle "gifts" or accessories, only to have them confiscated by U.S. Customs officials.** This may sound like poetic justice, but the turtles still die; the professional killers still get their money, and the world still faces the impending extinction of some of its oldest and most valued animals.

As an animal protectionist, you will want to warn your traveling friends not to lose their money on items that cannot be brought into the United States. Better yet, ask them to write API for a list of endangered animals which cannot be brought into this country legally — in whole or in part.

Green Sea Turtles Face Troubled Waters

The dwindling sea turtle, long a victim of man's exploitation, faces new threats from man. The animal may lose its shell of international protection. Placed on the endangered list by the Convention of International Trade in Endangered Species (CITES), the sea turtle is the target of yet new commercial schemes to "farm" for its meat, shell and eggs.

CITES, a ten-year-old organization brings together some eighty governments. They represent countries that export animal products — mostly Third World nations — and those that import such goods — primarily Europe, Japan and the United States.

"CITES is a treaty to regulate trade," explains Richard Parsons, Chief of the Federal Wildlife Permit Office. "It's not a treaty to prohibit or encourage trade."

CITES regulations, especially for the green sea turtle, have never been fully observed by member nations. Now even such limited protection has been undermined. Several signers of the CITES pact, notably the United Kingdom and the United States are attempting to legitimize so-called "farming" of green sea turtles. (A strange stance for the United States because it is a contradiction to our own Endangered Species Act.)

The most recent CITES meeting was held in Botswana, Africa, in April (see CITES report on page 36). Attending the session was API representative, Barry MacKay.

MacKay reports that plans to lift protections could have a far-reaching impact on the green sea turtle. The dangerous proposals come from Grand Cayman Island, a British colony and popular Caribbean resort for American tourists. Fomenting the trouble is the Cayman Turtle Farm, which has operated since 1964. Since then, the farm has imported some 460,000 eggs and several hundred adult turtles.

Now the Cayman venture is pushing to expand the world market for their turtle products by claiming their farm is a "closed-cycle" system — independent of any further stocking from wild populations of sea turtles. They say that increased trade of these "farmed" turtle products will ease the exploitative pressure on wild sea turtles.

But the facts don't support this rosy view. The farm had aimed for self-sufficiency by 1980, but their goal has not yet been met and doesn't seem possible in the foreseeable future. Hatchings on the farm thus far involve only the capture of wild turtles and turtles reared from eggs collected in the wild. These turtles constitute the farm's parental stock, and their offspring are the first generation of captive-bred turtles at the farm.

CITES farming regulations state that operations claiming to be farms must be able to "reliably and indefinitely" produce *second generation offspring*. To date, not a single turtle hatched and bred on the farm has ever produced an egg. In addition, the hatching success of eggs produced by wild-caught turtles has been steadily declining. Such claims clearly show that the farm — far from being able to produce second generation turtles — is unable to maintain even a first generation.

Another claim that protectionists refute, is that increased trade of "farmed" turtle products will lessen demand for illegal wild turtle goods. They have produced no



Baby green sea turtles.

Frans Lanting ©

evidence. On the contrary, experience shows that new trade stimulates appetites for such rare products — illegal as well as legal.

As with most failed ventures, the participants think that if only the rules were changed (and they were allowed to do more of what hasn't worked in the past) they could magically succeed. That is why they suddenly claim confusion on the wording and intent of previous CITES agreements, and are pushing to bend the rules.

The United States currently bans the importation of sea turtle products. However, the current administration is reevaluating this ban with respect to the Cayman Turtle Farm, a stand that could open up the turtle products market in this country. With no way to tell wild from farmed turtle products, trade in contraband would be impossible to control.

API's MacKay reports that no rule-bending was allowed at the April CITES meetings; but that such maneuvers will undoubtedly surface again. The Cayman Turtle Farm and its supporters (unfortunately our own government) cannot be allowed to circumvent the CITES accords or the U.S. Endangered Species Act.

MacKay concludes that holding the line on the green sea turtle, looms as a major battle, one for which API and other protectionists must prepare. 🐢



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Front Cover: Wild horses by Hope Ryden

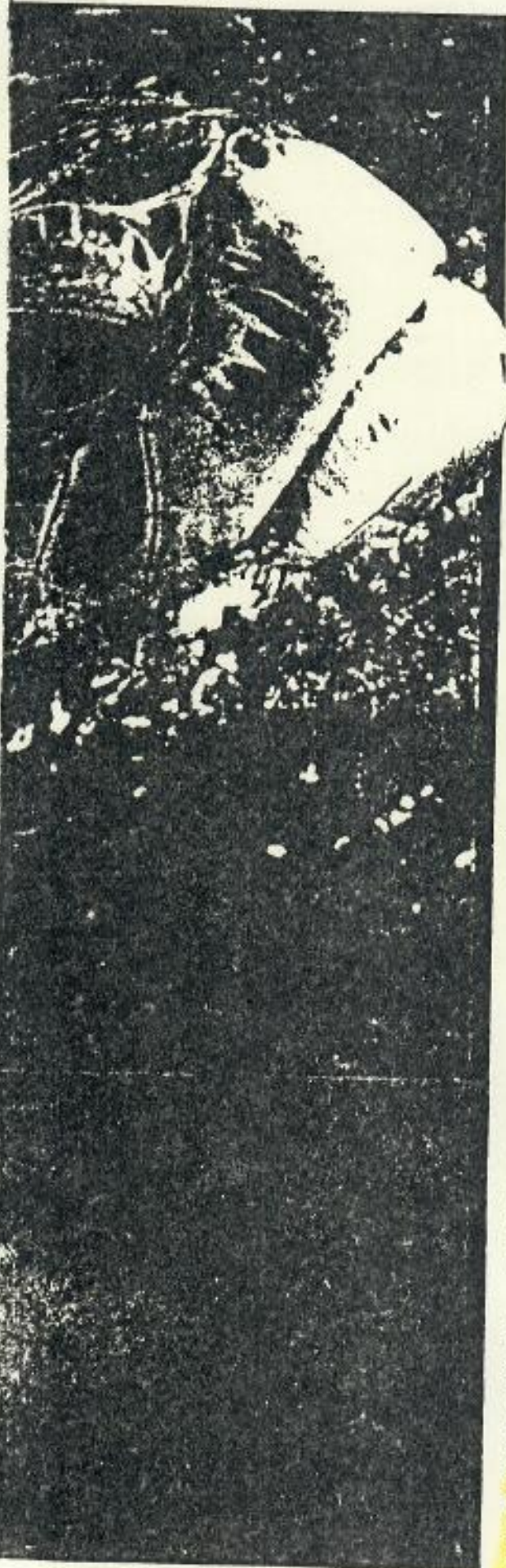
See Whale Postcard Insert

The photo on page 24 of Spring 1983 MAINSTREAM should have been credited to Dale W. Rice.

MAINSTREAM, the official magazine of the Animal Protection Institute of America, is published and distributed to members four times a year to inform and educate readers about major animal welfare problems of the day. Complimentary copy available upon request. Membership in API is \$15 per year. Subscription to MAINSTREAM is \$7.50 per year. The Institute is a tax-exempt, nonprofit organization whose goal is to eliminate or alleviate fear, pain and suffering among all animals everywhere. All contributions are deductible for income and estate tax purposes.

CAYMAN TURTLE FARM

One of a Kind



"Unique" is an over-worked word, one we tend to use without considering its true meaning.

Using the word "unique" to describe the Cayman Turtle Farm, however, is totally justified, since the farm is indeed the only one of its kind in the world. As the Farm's General Manager of Operations Josh Brown said recently, "You can enjoy the sea and the sun on almost any island, but you can experience a turtle farm only on Grand Cayman."

The Turtle Farm is important, though, not only because it is unique, but because it represents one of the few times in history that man has successfully triumphed over his own avarice. Because of centuries of unthinking greed, the sea turtle was a threatened species, close to extinction. That tide has been reversed, at least in the Caribbean, thanks largely to the

efforts of the Cayman Turtle Farm. This seems, somehow, just, since the cycle of taking turtles for food and by-products began in these islands hundreds of years ago.

The farm has its roots in hundreds of years of turtle use (and abuse) in the islands. This use began in 1503, when Christopher Columbus visited Cayman and noted an abundance of turtles in the native waters...so many, in fact, that he first named Cayman "Las Tortugas," or "The Turtles," in Spanish.

The commercial history of the sea turtle did not, however, begin until nearly one-hundred years after Columbus' discovery, when a pirate captain, William King, landed in Cayman and found the eggs of one turtle would "feed 10 men for a day." Seamen learned they could carry turtles on board and enjoy fresh meat at sea, and entrepreneurs soon realized the money-making possibilities of turtle products.

However, the turtling industry in Cayman came full circle in 1968, when a Miami-based marine biologist and an associate, intrigued by both the commercial and conservational possibilities of turtle farming, formed Mariculture, Ltd., the first and only commercial turtle farm in the world. This venture has since changed hands and now is known as the Cayman Turtle Farm.

There are two man-made beaches at the Farm, constructed to simulate nature as much as possible and to be used for egg-laying by the Farm's female turtles. Female turtles

by 150 or more eggs at a time, ten times in a season, usually about 10 days apart. During the early years of the Farm's operation, turtle eggs were gathered from the far-flung beaches of Costa Rica, Surinam and the Ascension Islands. Farm officials, mindful that female turtles are believed always to return to their native beaches for the egg-laying ritual, were forced to airlift a percentage of

the farm's hatchlings back to the beaches from which the eggs were gathered. Mindful, too, that less than one percent of all turtle hatchlings survive in the wild, farm operators released only those large enough to avoid being eaten by the birds, fish and crabs that are the turtles' natural enemies.

By 1978, the Farm was able to suspend its egg-gathering. Females at the Farm had begun

nesting on the artificial beaches and the survival rate was high enough that the Farm's needs were being met. The Farm, in that year, realized its founders' dreams: replenishing the depleted turtle population, providing a valuable source of protein to the world's tables, and earning money.

In late 1978, however, the United States, which provided the market for about 85 percent of the Cayman Turtle Farm's products, enacted legislation which made it illegal to import turtle products into the U.S. This sharp reduction in the world-wide market has necessitated a cut-back in the Farm's total operation, including its conservation efforts. A healthy market still exists for turtle goods, particularly in Europe, and the Farm does continue in operation, despite the loss of its U.S. sales. Turtles are still being born and raised at the Cayman Farm, and large numbers are being freed in Cayman waters.

The Cayman Turtle Farm has attracted many celebrities, including Marlon Brando. "He didn't come to Cayman for a vacation," Mr. Brown says, "he came because he was fascinated by the Farm and its purposes."

As well as being home for thousands of turtles, the Farm is home for a fascinating gift shop. If you buy any of the products made from turtle such as earrings, bracelets, pendants, necklaces, or turtle oil cosmetics, you will receive a certificate of authenticity. The turtle-oriented souvenirs available such as jogging shorts, T-shirts, pillows, refrigerator magnets, ceramics, and post cards mean that there are plenty of items which everyone can take home as a memento.

Admission is only U.S. \$4.50 and children under 12 enter at half price. You can catch a bus downtown in the By-rite shopping plaza or share a cab. It's a short ride to a truly unique experience.

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U.S. tourists

By Susan Postlewaite
UPI Business Writer

GRAND CAYMAN, Cayman Islands — Ten American tourists, wearing Bermuda shorts and sandals, crowded into a room at the Holiday Inn on Seven Mile Beach for a two-hour lesson in how to "reduce, defer or eliminate personal or corporate income tax" to zero.

The program opens with an American eagle soaring across the TV screen, while a narrator promises to "free you from the burden of oppressive taxation."

What follows is a videotaped presentation that describes exactly how to transfer cash and assets out of the United States by affiliating yourself with an offshore corporation.

"We're 100 percent legal," said Lynford Evans, the Cayman-born owner of U.S. Tax Planning Services Ltd., which is one of several investment firms in Grand Cayman. "That seminar brings in every potential person interested in saving taxes," said Evans. Doctors, lawyers, CPAs. You name it, they come."

The only people excluded from the seminar are U.S. IRS agents. Before the presentation begins, everyone has to sign a form denying he works for the IRS.

"IRS agents come in here all the time without telling Immigration," Evans said. "When we find out they are told to leave the office immediately and if they won't go we call the police."

A spokesman for the IRS in Washington D.C. said he had never heard of U.S. Tax Planning Services Ltd. and couldn't comment on it.

The seminar says the first rule to tax planning is: "divert income away from the individual by putting the individual into a corporate tax structure."

In 24 hours, you can set up a tax exempt company in one of the world's leading tax havens, turning over control of any foreign bank accounts to a third party to avoid lying to the IRS on your tax return.

The corporations are set up so you can truthfully answer three questions on the 1040 tax form: Did you have signatory control over any foreign accounts, were you grantor or beneficiary of a foreign trust, and did you at any time in the reporting



Two tourists leave a tax haven seminar at Seven Mile Beach in the Grand Caymans.

year buy, sell or possess stock in a foreign corporation in excess of 5 percent.

"It takes 24 hours to set up. You don't have control. You don't have ownership. The shares are held down here on the island," the instructor explained.

The catch is to give power of attorney of the company to a third party trustee in the Caymans. The trustee, probably a Caymanian, can invest the trust's assets in real estate, gold, silver, bank notes, or whatever the owner wants.

The tourists took notes as they learned how if the corporation is domiciled in the Caymans, the earnings are essentially tax free. The film says the scheme is especially good for doctors who want to get their assets out of the United States, both to shield them from taxes and from possible malpractice suits, as well as for other business people who want to reduce domestic profits.

"Since all transactions are private, and most transactions are diverted to other countries, the profits are not taxable in the U.S."

The tourists were told the company, which has 18 offices in U.S. cities, has 2,000 clients who pay an average \$4,000 to have their accounts set up and a \$15,000 a year maintenance fee afterwards.

taught how to beat IRS

U.S. tourists taught how to beat IRS

By Susan Postlewaite

UPI Business Writer

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The tourists attending the morning session Feb. 28 all refused to give their names. They paid \$25 a couple to attend, which entitled them to an interview with an "investment counselor" afterward. Three of the five couples said they planned to make an appointment for an interview.

One man who didn't make an appointment said he was a Wisconsin tax practitioner. "Avoiding taxes is a national pastime," he said. "My clients are always asking about tax shelters." He said the schemes outlined at the seminar were "sound" but would raise the likelihood of an audit.

Money Laundering in Caymans Investigated by Federal Agents

By Bill Deener

Dallas Morning News

DALLAS — Federal investigators have identified about 2,000 Texas businessmen, conmen and couriers who they suspect are using the tiny Caribbean country of the Cayman Islands to hide or launder money illegally and to evade U.S. income taxes.

Gathering the intelligence information is a prelude to an all-out assault on Texans' using the Caymans as illegal tax havens, said a source with the Internal Revenue Service.

U.S. Customs Service and IRS officials said they expect the Justice Department to form a strike force soon to combat the money laundering schemes. The force is expected to be similar to the Operation Greenback strike force in Florida.

"There is a lot of work and a lot of time involved in this. We are talking about hundreds of investigations," the IRS source said. "You're probably counting between 2,000 and 3,000 leads we have to look into." Each lead represents one person, he said.

TEXAS HAS BECOME at least one conduit for the flow of "dirty money" to the Caymans primarily because people can make airline connections to the tri-island country from Houston, said Frank Chadwick of the U.S. Customs office in Houston.

"I've got a flight that runs three times a week to Grand Cayman Island, so we look very, very closely at people who make repeated trips down there," he said. "When we find a bevy of CPAs or attorneys making the trip, we get very interested."

Miami is the only other U.S. city offering flights to the Caymans. Legitimate reasons for visiting the Cayman Islands exist, he said — snorkeling being one of them — but the country thrives because it is a tax haven, offering banking secrecy unmatched anywhere in the world, including Switzerland.

"People can hide money there with no questions asked, Chadwick said.

"Anybody who is smart enough understands that they can hide it (money) in a Cayman Island bank account with no

trouble. That's why they go there," he said.

MONEY EARNED through narcotics, fraudulent land schemes, stock manipulations, skimming profits from a company and gambling proceeds are hidden, then "laundered" through the Caymans, he said.

No one would even estimate how much. One Dallas IRS agent said: "Tons and tons of it leave Texas every year."

Laundering schemes vary, but many involve taking the "dirty" money to the Caymans and returning with a loan from one of the 350 banks chartered there for the same amount.

U.S. Attorney Jay Ethington of Dallas, who prosecuted the only money laundering case in the state last year, offers this example:

The courier, carrying a suitcase full of cash, flies by commercial airline to the Cayman Islands. The money is given to a representative of a company there, then deposited in a bank account under that company's name. The company representative then returns the money to the courier in the form of loan — a \$100,000 cashier's check, for example.

THE COURIER RETURNS to the United States and deposits the cashier's check in his account. The money is "clean" now.

If the IRS examined the banking records in the United States, the money would appear as a loan. The IRS is not permitted to examine the records of Cayman banks. The Cayman representative also provides phony loan documentation.

Because the money seems to be a loan, it seems as if the principal and interest are being repaid. Thus, payments are made on the "loan" and put into other Cayman accounts, thereby hiding that money from the U.S. government.

A Dallas man, who is familiar with the Caymans, said the islands are popular with Americans because English is spoken there, the political situation is stable and the IRS cannot crack the bank secrecy laws.

"You don't want your money in a

place where they are going to have a revolution next week," he said. "You can take money down there, deposit it just like in a Swiss bank and transfer it to the U.S. as loans, payments, salaries, whatever."

ANOTHER DALLAS MAN, who has laundered money through the Caymans, said: "The basis of the country is banking and tax avoidance. The general concept is that people who go there do it for a purpose, and that purpose is to avoid taxes. It's standard practice to provide this service."

The Caymans are small, flat islands of less than 100 square miles and 17,000 residents located 200 miles south of Cuba.

The islands — Grand Cayman, Little Cayman and Cayman Brac — are a British colony, but free of British taxes. It is a pure tax haven with only one direct tax — a \$10 a year individual tax on residents, Ethington said. Income, capital gains, dividends and inheritance are not taxed. Since the country has no taxes, it has no tax treaties with other countries. So tax evasion in the Caymans is not a crime.

"A banking officer can be jailed for telling us if someone even has an account there and our subpoenas aren't worth a thing," Ethington said.

CURIOSLY, IN THE midst of this tainted banking community, many of the most prestigious U.S. banks have chosen to establish Cayman branches. Ten Texas banks currently have branches in the Caymans, but federal authorities quickly point out that these banks operate legally and duplicate records of Cayman transactions are kept in the home offices.

Or as Ethington said: "If you are going to launder money, you don't deposit money in U.S. branches there because we can get at those records."

ALTHOUGH NO ESTIMATES are available for how much money was exported illegally from Texas last year, the nationwide estimate is \$500 million yearly, according to the U.S. Customs Service in Miami.

Caymans: Blue skies, big bucks

By Susan Postlewaite

UPI Business Writer

GRAND CAYMAN — Christopher Columbus discovered these three sparkling islands south of Cuba. Now 440 banks and 18,000 corporations have landed here, making the tiny spits of land one of the world's leading financial centers and tax havens.

Government officials say roughly \$110 billion a year passes through the Cayman Islands' secret accounts, which are more confidential than those in Switzerland.

Therein lies the problem. The IRS believes much of the money is illegal drug money and is being put in Cayman accounts to be laundered or to avoid U.S. taxes. Hoping to pry loose information about the accounts, the government has offered tax writeoffs so the Caymans can attract U.S. conventions.

But the Caymans aren't interested. The government has accused Washington of using "bullying tactics" to force the Caymans to accept U.S. law.

Most of the banks say they set up their subsidiaries in the islands to handle borrowing in European and other foreign money markets. There has been a huge increase in the last decade in U.S. borrowing of Eurodollars — American dollars that have accumulated overseas because of the U.S. deficit.

By doing their borrowing here, the corporations avoid a 30 percent U.S. withholding tax that would otherwise be withheld from interest paid. Such operations have been ruled legal by the IRS.

The islands don't advertise, but the corporations keep coming, says Registrar

General Woodward Terry. The registry now has 18,000 on its books.

"Some days we get 15, some days 20. But we can handle as many as we can bring in," Terry said.

The 18,000 offshore corporations, which began coming in the 1960s, already outnumber the 17,035 residents who live on the cluster of three British crown colony islands.

The IRS says the Cayman Islands, like a handful of other developing nations in the Caribbean and Central America, exhibit all the "factors" of places where drug profits are hidden and the IRS can be defrauded.

The factors include no taxes, strict confidentiality laws, lack of currency controls, availability of modern communications and self promotion as a tax haven.

The IRS can't estimate exactly how much money it may be losing in taxes through sheltered offshore corporations and accounts in the Cayman Islands. But a report published in January by the Treasury Department says the foreign assets of the Cayman Islands in 1982 were \$127 billion above the average foreign assets for developing non-oil producing nations. It also said the foreign assets of banks in Bermuda, the Caymans and Panama were sufficient to finance about 100 times those countries' exports.

The Cayman Islands' stringent secrecy laws create a brick wall for U.S. authorities trying to get information about offshore business. The confidentiality law, passed in 1976, makes it a criminal offense for a "professional," which is broadly defined as almost anyone in the Caymans, to disclose information about a business transaction.

Bernard Simon in Johannesburg reports on a different kind of trade dispute

Fierce debate about traffic in wildlife

TOUGH-MINDED business lobbyists and equally determined environmentalists have spent the last 11 days glaring at each other across the swimming pool of the Holiday Inn in Gaborone, Botswana.

When they have exchanged words it has been to argue about the rights and wrongs of the growing international trade in wild animals, reptiles, birds and plants, the subject of the biennial meeting of 81 signatories to the 1975 Convention on International Trade in Endangered Species (Cites). The conference ends this weekend.

No accurate estimate is available of traffic in wild fauna and flora, but Cites claims it exceeds the value of the illicit narcotics trade.

Legal shipments in and out of the U.S. by far the biggest market for furs, skins, horns and exotic plants (and also a sizeable exporter), are estimated

to be worth \$100m a year. Some 25,000 consignments of wildlife products pass through New York each year.

Cites aims to regulate this trade in an effort to curb traffic in species threatened with extinction. Its members agree, in an appendix to the Convention, to ban imports and exports for non-scientific purposes of about 600 endangered forms of wildlife, including apes, tigers, many leopards, rhinos, crocodiles, many birds of prey and orchids.

A second appendix lists 2,600 species which will be endangered if trade becomes excessive. These items—among them whales, African elephants and cacti—may be traded subject to government permits.

One of the most fiercely debated topics at the Gaborone meeting is which species should be transferred from the "total

ban" list to the "restricted trade" list, and vice-versa.

For example, the U.S. wants a ban lifted on the American Bobcat which it argues is no longer in immediate danger of extinction.

Several East and Central African countries—prodded by the fur trade and trophy hunters—have proposed controlled trade in certain species of leopard. Kenya banned leopard hunting six years ago, but the animals have apparently multiplied to the point where some farmers regard them as a nuisance.

On the other hand, there are proposals that trade in whales and hair seals among others, be more strictly controlled.

A large contingent of environmentalists has pounced on almost any suggestion that trade in wildlife be liberalised. According to one Government

delegate, "There is an emotive pressure to go a little beyond conservation and to protect instead of conserve."

Britain's policy, according to its chief delegate Mr John Goldsmith, a Department of Environment official, is to allow a maximum opportunity for developing countries to trade without killing the goose that lays the golden egg. The UK requires import permits on a wider range of species than those listed by Cites. It issues about 16,000 licences a year.

The British delegation has spent a good deal of time in Gaborone lobbying on behalf of the Cayman Islands for freer trade in the Cayman turtle, one of the islands' biggest export earners. A U.S. ban on imports and trans-shipment of turtle products has virtually killed the local industry which for the past 20 years has bred turtles

in captivity for use in soup, jewellery, cosmetics and leather products.

The credibility of the convention is undermined by the difficulty of enforcing its provisions.

Catching traders in endangered species is often almost impossible. The borders of countries where many of those animals and birds originate are badly patrolled, and forged documents are a way of life.

Cites' enforcement efforts are concentrated on traders, mostly in the U.S., Europe and the Far East, rather than on those who kill the animals. Dr Mostafa Tolba, UN environmental programme director, noted that "the small-time poacher, who is invariably paid a pittance and thinking mostly of a hungry family, is as much the victim as the animal he kills."

BUSINESS

LY / Business

imes to China

China is about to open its first food restaurant, using Donald's hamburgers and french fries. It is food, Yi Li being the name of the new bakery, which will supply the Along with standard U.S. food like fries, fried chicken, ice cream cones - restaurant will sell traditional soybean milk, salted duck eggs and high sticks. Large pictures of Donald's chicken drumstick and drink are used on the food packaging.

rises

In the fourth quarter Great Britain's index was up 0.5 percent from the third and 2.5 percent higher than the 1982 according to preliminary data. The office said yesterday. The index on 1980 equalling 100, stood at 101.9 in the third quarter, up from 101.9 in the third quarter of 1982.

spapers merge

TV, Inc. — Columbia City's two newspapers, the Columbia City Post and The Post & Mail, which will be published six days a week. Doug Driscoll, general manager of the Columbia City Publishing Co., said the merger is the result of the estate of Dec. 30. Combined, the Post & Mail will have 15,142.

rism hurt by taxes

OWN, Prince Edward Island — Tourism is hurt by taxes from just across the border, are in Canada is driven because of high gasoline taxes, a top industry official said. Association Chairman William Pat had lost much of its business from a drive within a six-hour drive of the province prices are 45 percent higher.

realign currency

France plans to realign its currency system, raise domestic fuel prices and cut the earnings of highly paid executives under an austerity program this week, President Jaures said. The measure planned by the new government is seen as a move to restrict foreign investment.

is, says Howe

British Foreign Secretary Geoffrey Howe says the European Economic Community is not away from its decisions in the next few months. He said that a breakdown in the EC would lead to trade negotiations.

sale OK'd

Kruger Co. said yesterday its sale to a Pittsburgh-area firm has been approved by both sides. The price of the transaction, as well as the terms, but it will provide a source of cash for Kruger, said Jim Kruger for the nationwide grocery retail headquarters.

picket Saks

Unionized furriers say they will picket Saks in a contract dispute today and tomorrow in an attempt to discourage buying fur coats. The strike, which was called after contract talks failed.

s approve pact

Union employees of the Kelly-Springfield Co. in Cumberland have voted to accept a new contract for wage reductions. Some of the grievances which cover four years and four four-shift, seven-day work week will be about \$1.50 an hour, union officials reached the tentative agreement.



The green sea turtle, which is listed as an endangered species, provides the Cayman Islands' only real export industry. But since 1978, the British colony's largest customer, the United States, has banned imports.

U.S. ban on sea turtles hurting Cayman Islands' top business

By Steven K. Beckner
WASHINGTON TIMES STAFF

Turtle meat is not one of the more burning trade issues for the Reagan administration, burdened as it is with disputes over imports of steel, shoes, textiles and countless other things.

But for the government of the Cayman Islands, turtles top the trade agenda.

The green sea turtle, which is listed as an endangered species, provides the Cayman Islands' only real export industry. But since 1978 the British colony's largest customer, the United States, has banned imports of all green sea turtle products — including those raised in captivity on the Cayman Turtle Farm.

The pungent meat of the green sea turtle has long been a delicacy in soup. Its skin is also prized for purses and wallets.

The Cayman Islands, best known as a Swiss-style tax and tourist haven, is trying to get the turtle ban lifted. American environmentalists are doing their best to keep it in place.

In the middle is an administration committed to boosting Caribbean prosperity but loathe to incite the vocal environmental movement.

In Washington last week to lobby the Commerce and Interior Departments to lift the ban, John McLean, the Cayman Islands' Minister of Agriculture, Lands and Natural Resources, said in an interview. "We feel badly about it, especially for the United States to put a ban on our only industry when we buy 95 percent of our imports from the United States."

"If the Caribbean Basin Initiative is to have any meaning in the Caymans, it must be possible for us to export our turtles to the United States," said Mr. McLean, a member of the Cayman Islands' executive council.

An appeal based on the Caribbean Basin Initiative could strike a responsive chord with the administration. Proposed and great hopes in late 1982 and approved by Congress last July, this 12-year program of trade concessions, investment incentives and aid is an integral part of U.S. foreign policy in that region.

The Cayman Islands, which prospered after the turtle ban, that provided room for his crew.

PROFILE

still has a turtle on its official seal. The islands have the highest standard of living and the lowest unemployment rate in the Caribbean.

Mr. McLean said they are being punished for doing the kinds of things the U.S. program is supposed to encourage.

The turtle farm was founded in 1968 by a group of American and British investors. It was taken over in 1975 by a German-Swiss consortium after the original company filed for bankruptcy.

The turtle farm pumps up to 3 million gallons of sea water per hour through a complex of tanks and ponds. At its peak, the farm had 2 million pounds of live turtles. Its exports, two-thirds of which went to the United States, were worth \$1.4 million — compared with a national budget of \$15 million.

Even at its peak, the farm was never profitable. Since the ban the farm has shrunk to 250,000 pounds of live turtles. Last year, after losing a series of court battles to overturn the U.S. ban, the farm was bought out by the Cayman authorities.

The same array of environmental organizations that got the ban imposed

during the Carter administration continues to keep turtle farm products out of the United States, even through many other signatories to the Convention on International Trade in Endangered Species imports them.

Environmentalists are annoyed by the fact the turtle farm last year reared 4,405 baby turtles to the wild or by the farm's contention it is filling a wildlife gap.

"We have collected no more eggs in the wild since 1978," said farm manager James Wood. "We're self-sufficient."

In fact, by incubating and hatching eggs, then releasing baby turtles, "we're trying to re-establish the sea turtle population in the Caymans," said Mr. Wood, who has a doctorate in zoology from the University of Arizona.

But environmentalists remain critical.

Michael Weber, director of the Center for Environmental Education's Sea Turtle Rescue Fund, said that far from substituting for wild turtle, farm products stimulate demand for it. He said it would be too difficult for customs agents to enforce a ban only on wild turtle.

Mr. Weber called the turtle farm's release program "laudable" but said "we do not think that outweighs the risk to the wild population."

Besides, he said, "There has never been a turtle that has been [released] and later been found to lay eggs on a beach."

He is echoed by Michael Benn, chairman of the Environmental Defense Fund's Wildlife Program, who said "it's totally speculative whether they are capable of breeding in the wild or whether they're just cuckoos out there living out their natural lives."

see TURTLE, page 68

AMC ma hit black — 1st tin since 198

Associated Press
After losing money every year for 30 years, the American Motor expects to end its slide by annual profit when it reports its 1983 today.

General Motors Corp. and Ford Co. already have reported their 1983 profit of about \$5.6 billion, a record for the industry, top previous best of \$5.18 billion in 1982.

AMC Chairman Paul Tappan and President Joe Dedur scheduled a news conference after noon at the carmaker's Detroit headquarters in South report the earnings figures.

"American Motors has not reported profit for 14 consecutive quarters," spokeswoman Gail Pomerantz said.

"I can't really confirm what is happening, but all the forecasts say it will be a profit for the quarter."

AMC reported losses of nearly billion dollars from 1980 through 1983. The company's last quarterly profit in January-March 1980, when it lost \$1.3 million.

But Mr. Dedur said in January that the nation's fourth carmaker would report black ink quarter, thanks to its best sales in years.

He refused to say whether would make money for all of 1983 would be estimated the size of its for the first three months of this year.

He said AMC sales rose 4 percent in 1983, and the company's market share by one percentage point, to 2.8 percent.

The French automaker Renault, which has attributed the gains to sales of its Renault Alliance and models.

AMC sold an estimated 162,700 last year, up from 112,433 in 1982, the best since the 274,649 sold in 1977. Sales were estimated at 83,000 year, up 28 percent over the 63,000 year earlier and the best since 1980 when 140,431 were sold.

Ford snatched three straight major losses with 1983 earnings of \$1 billion, eclipsing its record of \$1 loss in 1977.

GM announced a profit of \$1 billion for 1983, topping the No. 1 carmaker's previous record earnings of \$1.5 billion in 1978.

Chrysler Corp. is expected to report its 1983 results later this month.

Markets closed for holiday

Stock tables and foreign exchange figures do not appear in today's edition because the stock markets were closed in the United States due to the President's Day holiday. In addition, the weekly treasuries auction was delayed until

cup of coffee?

If so, you may well be a "Yuppie," or Young Urban Professional, a stage beyond the preppie and way above the yuppie and the hippie.

Many Yuppies are the dropouts of the 1960s and early 1970s who have dropped back into the main stream in the 1980s with a vengeance, according to the authors of "The Yuppie Handbook."

All across the country, Yuppies are elbowing for the best, from parquet flooring to pet Akitas to a salary in six figures.

"Yuppies are motivated by a desire for success and achievement and fame," says Marilee Hartley, co-author with Marissa Piesman of the book, a publishing success that partly owes its inspiration to the runaway success of "The Preppie Handbook."

brick. Its adherents, urbanites who claim to be between the ages of 25 and 45, brunch on the weekend and work out after work.

Unlike preppies, Yuppies are not complacent about their status — they avoid Brooks Brothers clothing and embrace Ralph Lauren. The Yuppie also believes in self-improvement courses like "Earlobe Massage" and "Hypnosis Negotiation."

Says Ms. Piesman, "Yuppies have a sense of insecurity more common in first and second generation over-achievers. They thrive on a little bit of anxiety, which explains their fascination with psychotherapy."

The tongue-in-cheek handbook was based on research in 35 cities, and the two writers claim to have found various Yuppie subcultures — Buppies (Black Urban Profes-

shabby part of town which can then be transformed into high-tech splendor.

Yuppification of urban neighborhoods, usually marked by giant dumpsters filled with old linoleum and broken plaster, means that certain things disappear, like candy stores and laundromats, and certain things come in, like gourmet food emporiums and outdoor cafes.

Rolex or Cartier tank watches are favored among Yuppies, who are drawn to exotic vacation spots like the Australian outback or the Great Pyramid.

"Yuppies want it all and often burn out," says Ms. Hartley.

Denture boutiques, decaffeinated cappuccino and liver spot support groups may follow as Yuppies grow older, the authors predict.

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TURTLE

From page 5B

Both Mr. Weber and Mr. Bean said the farm has been unsuccessful in producing second-generation turtles in captivity — grandchildren of the turtles first taken from the wild — as the international convention and U.S. regulations require for an exemption from the trade ban.

"They haven't produced a single second-generation offspring," said Mr. Weber. "Their products are entirely dependent on animals from the wild." Mr. Weber said he is not alleging the farm is still taking turtles from the wild.

Mr. Bean said the farm "has gotten some of those farm-hatched turtles to produce eggs and have those eggs hatch into turtles that are viable," but said the farm has only produced "a few hundred" such offspring in its best years.

Part of the problem is that sea turtles, which have been known to live for hundreds of years and grow to 600 pounds or more, may not even reach sexual maturity for 30 years — far longer than the farm has been in existence. The Cayman farm turtles become soup at age 1½, when they weigh about 52 pounds.

Archie Carr, a graduate research professor at the University of Florida at Gainesville, another leader in the fight to ban turtle imports, says he is against the release of farm turtles to the wild, because their different geographic origin could cause cross-breeding that would "destroy diversity."

He said when he learned of a previous release of turtles by the farm, he told the owners, "I wish the heck you'd kill every one of those thousands of little turtles and send the meat to the Hindus."

He said he once spread several hundred thousand sea turtles around the Caribbean in an effort to repopulate it, but his turtles were all from Costa Rica

while the Cayman turtles come from as far away as the Ascension Islands, a British-owned group in the mid-Atlantic Ocean.

Mr. Wood says the farm is being unfairly treated because the United States allows the sale of farmed alligators.

But Megan Durham, a spokesman for the Interior Department's Fish and Wildlife Service, said, "The situation with alligators is different because the population is clearly becoming more numerous since it was protected."

The Commerce Department seems more amenable to lifting the ban than the Interior Department.

"From our point of view we have no problem lifting the ban," said James Winchester, associate administrator of the National Oceanic and Atmospheric Administration (NOAA).

"I don't understand how [the ban] has anything to do with protecting endangered species," said Mr. Winchester. "You have to stretch your imagination to see how it will have any effect on the wild population. It sounds pretty far fetched to me."

"We have a pretty good way of keeping things under surveillance to make sure [turtle products] are coming from the turtle farm." As for the environmentalists' objection that the farm can't produce second-generation turtles, he said

"if that happens they simply go out of business, but why put them out of business now on something so uncertain."

For the moment, the Cayman Islands would be content merely to get permission to transport its turtle products — soup, steaks and shell and leather goods — through the United States. The government-owned turtle farm cannot even bring its goods to American ports en route to other countries. Much of its produce is consumed on the islands, therefore, where turtle is both a staple and a delicacy.

Last April the Fish and Wildlife Service and NOAA published a proposed rule that would allow transshipment. But Ms. Durham said, "We haven't made a decision and we don't have a timetable for making a decision."

At a meeting with Fish and Wildlife officials last week, the transshipment rule was not discussed. Instead, the Cayman Islands proposed redefining the farm as a "ranch," which would make it easier for it to qualify under the international convention.

Ms. Durham said the islands "would have to show their operation benefits the survival of the species in the wild," but wouldn't have to prove that it has produced a second generation and could supplement its population with wild stock.

IRS will check tip reporting

From combined dispatches

Food establishments will be watched closely by the Internal Revenue Service this tax filing season as new rules designed to improve tip income reporting go into effect, a certified public accounting firm says.

Laventhol & Horwath of Philadelphia says the IRS plans to select 1,200 restaurants for audits to determine compliance levels, which it believes will initially be very low.

In a recent series of nationwide seminars for lodging and restaurant owners, the firm found that employers are encouraging workers to report tips at 8 percent of gross receipts.

Laventhol & Horwath said the IRS claims that even though this percentage may result in more reported tip income than ever before, the owners are still subject to stiff fines and penalties if all tip income is not declared.

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...Fairfax County had an opportunity to pick up more than \$644,000 in state liquor revenue. But two Northern Virginia delegates, Democrats Vivian Watts and Dorothy McDiarmid, abstained on a proposal to change the way the revenue is distributed to localities. An amendment to use University of

ulation compiled by the U.S. Bureau of Census every 10 years. But the amendment would have allowed the use of the University of Virginia's annual estimate of the state's population. This change would have benefited rapidly-growing areas such as Fairfax County because current population figures would

more than \$644,000 returned to Northern Virginia. It seems a shame that 22 delegates valued party politics more than the interests of their districts.

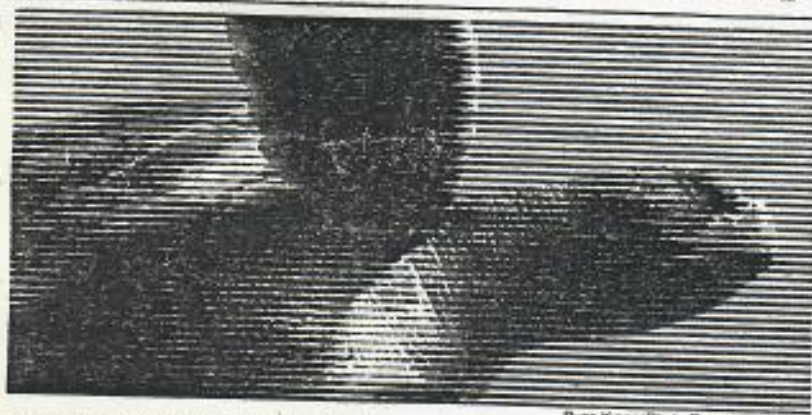
FRANK MEDICO
Fourth District,
Virginia House of Delegates
Richmond, Va.

The Cayman Island turtle farm that's in hot soup

Steven Beckner's Feb. 21 turtle tale, "U.S. ban on sea turtles hurting Cayman Islands' top business," is a strange one. The Cayman Turtle Farm has bred more specimens of this endangered species than any other organization in history, yet many environmentalists would like nothing better than to see the farm go belly up.

Mankind's centuries-old demand for turtle products has led to the species' current precarious state. But the environmentalists worry that the farm's operations will somehow "stimulate demand" for wild turtles. Certainly wild turtle stocks are on the verge of extinction, but there are calls for the farm to slaughter thousands of hatchlings rather than release them into the ocean. With friends like that, what species needs enemies?

The environmentalists' strategy for protecting the sea turtle involves suppressing an age-old human appetite through government action on an international scale.



Russ Krone-Photo Researchers, Inc.

However, if the species can be raised in captivity, then its continued existence might be assured through private incentives with minimal government involvement, while at the same time commercial pressure on wild stocks would be reduced.

The magnitude of the current illegal traffic in wildlife suggests the likely failure of the first strategy. The attractiveness of the second strategy is what led the Pacific Le-

gal Foundation and The Association for Rational Environmental Alternatives to propose it in a rulemaking petition to the Department of the Interior. That was over two years ago, but then turtles aren't the only things that move slowly.

SAM KAZMAN
Managing Attorney
Pacific Legal Foundation
Washington

Evolution; creation science, and the Bible

The Feb. 22 letter, "Evolving from the Dark Ages," from two University of Maryland professors of zoology, was extremely revealing.

Measured by empirical scientific method, Darwin's theory is not a theory. Darwin collects enough data to form a working hypothesis. Mr. Darwin's hypothesis leads to an inductive conclusion. The required prerequisites to establish that which could scientifically be labeled a "theory" have never been satisfactorily accomplished, much less demonstrated by Mr. Darwin himself.

It would be understandable if social scientists claimed a demonstrable "correlation," but to have two laborers in the natural sciences support a "theory" that has not met the empirical requirements of establishing itself as a true theory should raise some eyebrows, if not the rank and phillia.

Mathematically, Darwin's hypothesis is unsound. It has man ascending and descending at the

school senior, knows is unacceptable.

Since the professors and their assistants are human, rather than believe they would deliberately twist the method necessary to establish a theory in the scientific sense of the word, I suspect they simply never had the time to apply the empirical yardstick.

MICHAEL A. TAYLOR
Gaithersburg, Md.

After reading the Feb. 22 response to John Lofton's Feb. 8 column, "Darwin's fairy tale not fit for schools," by two professors, I would have remained silent except that their "facts" are like Swiss cheese — shot full of holes.

To describe Charles Darwin's work as "500 pages of solid evidence drawn from many areas of biology," and therefore settled, while ignoring thousands of pages

deed. Not one word, passage or paragraph of the Bible has ever been disproven, although many scientists have tried. The Bible does not propound or support the evolution theory — it categorically denies it.

The idea that to refuse to teach something is to provide a "second-class education" is also interesting. They are equally unwilling to teach the Biblical view of creation or even give it equal time.

They offer faddism as evidence of the undeniability of their philosophy. Because an idea has risen to a certain level of interest or even acceptance in society, is no evidence of its validity. After all, the world was once very flat.

Finally, they suggest that those of us who don't believe their theory do so only because it is inconsistent with our beliefs. The fact is, it is inconsistent with the truth.

LAWRENCE C. MORGENTHAU

The Washington Times March 7, 1984

An alternative to nuclear arms negotiations

Nuclear arms limitation negotiations mean nothing because nuclear balances mean absolutely nothing. If there were such an conceivable imbalance that the Soviets could nuke us and we not retaliate, nevertheless all those unscathed Soviets would die from the side effects. And vice versa. Only a tiny fraction of either nuclear stockpile need be used and all of us die horribly.

Not another cent should be spent for MX missiles, B-1 bombers, or other useless nuke systems. That will help to rebalance the budget and give America staying power for other tasks. If money must be spent on the military, spend it where balance-of-power will mean something — conventional forces. There, "negotiating from strength" might still have some meaning.



Meanwhile, because it has been so difficult to arrive at and sustain complex weapons-limitation agreements with the Soviet Union, why

not try for something relatively simple and fresh? The U.S., U.S.S.R., and their allies should agree to a worldwide, 1 percent tax on all arms production and all military spending. The proceeds of this 1 percent tax can go to alleviate world hunger and to develop the Third World.

Once acceptance became general, every five years — unless either the U.S. or U.S.S.R. vetoed it — the tax could be upped another 1 percent. Eventually, relative to the costs of military means, peaceful means to pursue international goals would become an irresistible bargain, even as tax proceeds from military spending made peaceful means more attractively feasible.

WIN WENGER
Gaithersburg, Md.

Private initiatives for sea turtles

I read with interest Sam Kazman's March 2 letter, "The Cayman Island turtle farm that's in hot soup," regarding the Cayman Turtle Farm. Mr. Kazman is factually wrong on a number of points.

Like the Pacific Legal Foundation, conservation organizations support private initiatives to save endangered species. If Mr. Kazman knew about sea turtle conservation efforts at all, he would be aware of the millions of hatching sea turtles that have been released as part of conservation programs supported by our organization and many others around the world. These efforts are the product of the very type of private initiative which Mr. Kazman extolls and which are performed at a fraction of the cost of those at the farm.

Second, the industrialized world's demand for sea turtle products is not the result of an "age-old human appetite," unless Mr. Kazman means something so general as an appetite to consume anything that moves.

While the ban on the sale of sea turtle products in the U.S. has not totally stopped illegal trade — what ban has? — the ban has substantially reduced sea turtle trade. There is virtually no demand in the U.S. for sea turtle products. It is difficult to accept Mr. Kazman's argument therefore that importation of Cayman sea turtle products into the U.S. would stem worldwide trade in sea turtle products.

The facts are that the Cayman Turtle Farm does not meet international standards for trading in green sea turtle products. If Mr. Kazman disagrees with the international criteria, he should attempt to change the criteria instead of ignoring them.

It is truly ironic to us that Mr. Kazman chooses to use the Cayman farm as an example of private initiative "with minimal government involvement," as it is owned and its unprofitable operation is subsidized by the Cayman Islands government.

MICHAEL WEBER
Director, Sea Turtle Rescue Fund,
Center for Environmental Education
Washington

Grace fund-raiser

In reference to *The Washington Times*' Feb. 20 story, "Tears and accolades for Princess Grace," I am sure that the Princess Grace Foundation could acquire many more dollars if it would offer for sale the cassette tapes of the "impromptu duet between Julio Iglesias and [Placido] Domingo" as well as the "short concert by Julio Iglesias" on the night of Feb. 18.

I know that I, at least, would gladly purchase them.

S.P. NIEMAN
El Paso, Texas

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The Washington Times Mar 8, 1984

WHAT'S NEW

—on the Cayman business scene

To highlight developments on the local retail scene *The Northwester* continues a feature which aims to portray some of the new products and services available in Cayman. Shops and service firms are invited to submit items for inclusion.

Jewellery Factory creates beauty

CARIBBEAN GEMS and Jewellery, Ltd. has a new look and a new name.

Renamed The Jewellery Factory, the Fort Street store has been completely redecorated in an attractive "jungle hut" motif. The two-thirds of the store nearest the street teems with the company's wide selection of products. There is everything from earrings to pendants; in materials that range from black coral to conch shell and include the island's unique Caymanite.

The back third of the store houses some of the grinding and polishing equipment where Caymanian artisans create new jewellery as customers watch.

The company was begun some yeras ago by **Sam Smith**, a Canadian, the business was then taken in hand by his son, **Dennis**. About two years ago Dennis returned to Canada and things were left in the care of a succession of managers until return last year. They first dealt mainly in Caymanite and then in black coral when it was discovered off the island. Turtle shell is a relatively recent addition to the line.

Dennis Smith is very proud of the staff of workers he has gathered. "We now have the best accumulation of talent on the island. Out of all the people I have working here I don't think I have one that I wouldn't put against anyone, in their

particular job, in the West Indies. I think we produce a better quality product than anyone else anywhere."

The staff is almost completely Caymanian and, in large measure, they have received their jewellery-making training with Caribbean Gems.

Creativity is stressed. Mr. Smith commented that he did not feel that producing jewellery identical to that available anywhere else was the answer. "You've got to do something different. We're making three or four different new pieces of jewellery a day. If they go quickly or we get comments on them then we adjust production. The whole idea is to get into totally new concepts on jewellery. We've got the basic stock up to the point where we can be creative. I mean very, very creative."

And creative they are. The work on display includes such items as a pendant on a heavy silver chain. Mounted on a disc of polished turtle shell is a delicate casting in silver of a sign of the Zodiac. Heavy 14 kt gold rings display "gems" of polished black coral. Turtle shell is carved in a riot of shapes to please any buyer.

The location hasn't changed — it's still on Fort Street — but not much else remains unchanged as Caribbean Gems steps out in its new finery as The Jewellery Factory.



LEFT: Sonia Watson is a young lady with a lot of hearts as she sorts and selects pieces of carved turtle shell to be made into jewellery.



BELOW: Dennis Smith, owner of the Jewellery Factory, shows visitors some of the unusual pieces on sale, all made on Grand Cayman by local artisans.

improve. I supervise the exercising and only two machines are non-manual as I believe in making the body exercise with the minimum help from equipment.

Question: What are the benefits of a steam bath?

Answer: The steam relaxes the body, eases painful joints, gets rid of body toxins in excess body fluid and is a very deep pore cleanser. The skin condition is improved by the cleansing and toned-up circulation. Some clients like to have their head cool while the body perspires and the steam cabinet is ideal in this way.

Question: Is the Sauna better than the steam bath?

Answer: The Sauna is dry heat but it can be made moist by pouring water over the mineral rocks and this is done for the last ten-minute session. It is a longer process than the steam bath which is usually for a period of 15 minutes, and involves three ten-minute sessions in the Sauna room with showers, and if desired swimming in the sea water pool in between each session in the Sauna. Being able to lie down is very relaxing and the heat bring out the lovely smell of the wood and vapours from the mineral rocks which are beneficial for sinus and bronchial sufferers. The benefits are similar to the steam bath, but it is a longer treatment and having the toning-up of the shower and swim to stimulate the circulation it combines to make it a very health-giving treatment.

Question: Will I put back the weight lost in the steam or Sauna — which can be from 1 lb. to 3 lbs.?

Answer: As this is body fluid you will put back a certain amount when you drink, but it will go into a cleansed system. I find the weight loss is a big incentive to people trying to reduce and they are encouraged to keep their weight down by non-indulgence in food and drink after their Sauna and steam.

Question: What advice do you give for an overweight person who would like to join the Health Centre?

Answer: Check your blood pressure and heart with your doctor, also the diet which I give to make sure it is correct for you. Along with your diet, use the gymnasium and pool as many times during the week as possible along with a steam or Sauna at least once a week. For complete pampering and relaxation treat yourself to a body and face massage. Think thin and be optimistic that you will lose weight and you will.



Tina Hull, a qualified beauty technician, gives a Health Centre customer a facial in the new beauty treatment room.

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Interbank creditors told of 'Caribbean South Sea Bubble' and 'fraudulent conversion' probe

3,500 ounces of gold 'missing'

Liquidators meet Doucet twice

THE liquidators have had two meetings with the former head of the Interbank House group, Mr. Jean Doucet, the creditors were told. Mr. Keith Norman said that he and one of the liquidators' attorneys, Mr. Ian Paget-Brown, went on the first visit for the principal purpose of getting confirmation of the facts they had gathered about the gold bullion transactions. They discussed the transactions with two of the members involved.

"At the second meeting," said Mr. Norman, "we discussed some of the difficulties we were having in identifying the full assets of the bank, the form of the loans and back-to-back transactions, and what possibilities there were of undoing these transactions to ensure we did not pay out a creditor twice."

There had been no irregularity at the meetings, he added, and it was unlikely there would be any others. To a creditor who asked if it was possible to attach the property of the Doucet family, Mr. Norman replied that when requested Mr. Doucet had given the liquidators power of attorney over his possessions in Cayman.

When another creditor cited a rumour that Mr. Doucet had been granted a bank licence in another country, Mr. Norman said he had heard the rumour but did not believe it to be a fact.

JUST FOUR MONTHS after Grand Cayman's most flamboyant financial institution, Interbank House, closed its doors, the creditors of its two main banks, Sterling Bank and The International Bank, got their first chance to ask questions about the collapse which they had already been told had left a deficiency of at least C\$15million.

For three days, January 13, 14 and 15, the fact-finding, formalities and occasionally bitter arguments of creditors' meetings provided an unusual fare at The Cinema as the liquidators reported progress on their task of dealing with what one of them termed "a sort of Caribbean South Sea Bubble".

Apprehension that the bitterness felt by many depositors at the apparent loss of their savings might provoke violence during the meetings was not justified. Predictably, the banks' management — notably their founder and chief executive, **Jean Doucet** — came in for much criticism, and there were numerous allusions to the possibility of criminal proceedings in the case. On this aspect the strongest language came from the liquidators, specifically in reporting on their findings in the matter of the banks' dealings in gold.

Liquidator **Keith J. Norman**, reading a report which he had prepared with his two colleagues — accountants **Michael Austin** and **Robert Landori-Hoffmann** — said that bank records showed that when the collapse came on September 15 there should have been 3,500 ounces of gold held on behalf of clients but in fact there was none. It appeared that the practice had been for International Bank to purchase gold on 20 percent margin, to be held in a Swiss bank for the account of Sterling Bank. But in the later stages of the bank operation the bank merely charged the client, confirmed to him the purchase of his gold but in fact did not purchase any gold, even on margin. And in May, 1974, said Mr. Norman, all the bank's gold holdings had been sold, the proceeds used to pay off the interest due to the Swiss bank, and the small balance placed in the general account of Sterling Bank.

"This appears to be tantamount to fraudulent con-

version," said Mr. Norman, "and the facts were reported to the Grand Court in October, and the matter is under investigation by the proper authorities."

He made his reference to "a sort of Caribbean South Sea Bubble" after reporting on an item of \$6million listed in bank accounts as loans to holding companies. This, he said, appeared to represent "a series of artificial internal bookkeeping entries which had the effect of inflating the apparent assets and liabilities of the entire complex."

'POOR MANAGEMENT' BLAMED

On the vital question of why the banks failed, Mr. Norman recalled that in a statement to the Press after the collapse Mr. Doucet had ascribed it to an international run on small banks which had prompted massive withdrawals by depositors over the previous three months. "Technically speaking, the final collapse of the banks was precipitated because withdrawals exceeded deposits in the last few weeks," said Mr. Norman. "However, the real reason for the failure, which was inevitable, must be attributed to the poor management of the Interbank House Group itself."

In the 12-month period up to September 15 the payroll of the two banks had been about \$1.25million, with administrative and other costs adding at least 50 p.c. During this period the expense account of Mr. Doucet totalled \$160,000 excluding air fares. It meant that a monthly cash inflow of at least \$150,000 was required to sustain this expenditure. But the group was more and more involved in three "cash-hungry" developments — Mitchell's Creek Gardens and Governor's Harbour in Grand Cayman and Anegada in the British Virgin Islands — and in this period they absorbed more than \$5million, all of which had to be found from the banks' internal resources — namely, the funds of depositors. With no such positive cash flow collapse was inevitable without urgent steps to reduce investment and operating costs.

"We believe that the senior management of the bank realised," said Mr. Norman, "that the only way to sustain the activities of the group with its heavy investment demands was to continue to increase the net inflow of deposits at a rate sufficient to cover the rate of withdrawals and the very heavy expenditure. From our investigations to date it is fairly clear that in fact all the important or significant decisions in this affair were made by Jean Doucet and Jean Doucet alone." Later repeating this assertion in reply to a questioner, Mr. Norman added: "He called the shots."

DEFICIENCY OVER \$15MILLION

During the meetings, no estimate was given of the likely distribution to creditors as a result of the compulsory liquidations ordered by the Grand Court on September 19, over-ruling an earlier petition for voluntary liquidation. But in an earlier notice to creditors the liquidators had estimated the realisable value of the Sterling Bank assets at \$2.273million and liabilities at \$17.429m., leaving a deficiency as regards creditors of \$15.164m. The International Bank deficiency was estimated at \$21million. Also sent to creditors was a statement of the book value of the two banks assets compared with the estimated realisable value. This showed that while bank records listed assets at US\$34.18m., the liquidators estimated they would realise no more than US\$4.17million.

In his statement to the creditors' meetings, Mr. Norman said that from the outset of the liquidation the two banks were insolvent. The group's cash resources totalled about \$600,000, with current and overdue payables in excess of \$2.5million. It

was estimated that over the previous year the group had incurred a consolidated trading loss of at least \$2m. with a net cash outflow of \$5m.

LIQUIDATION COST: \$60,000 A MONTH

As he commented at one stage of the Sterling Bank meeting, there was not much in the way of good news for creditors. The nearest to this were Mr. Norman's announcement that the liquidators are in negotiation with a group interested in buying the entire assets of the group, also with a U.S. bank which has a Cayman branch on the possibility of their providing a \$2.5m. line of credit for the completion of the Mitchell's Creek Gardens housing project. Perhaps the least-welcome item of news was that the liquidation so far has cost \$520,000 and is now costing at the rate of \$60,000 a month — with the prospect that it could last another six to 12 months.

Mr. Norman referred to the complex nature of the group organisation, with more than 100 companies operating in over a dozen countries, while there were about 1,750 creditors in at least 30 countries. More than 20 legal and accounting staff had had to be employed for various periods to understand and control "this complicated corporate edifice."

An area of work recently initiated involved the investigation of the multitude of transactions which had taken place in the 12 months immediately prior to the banks' collapse. "This investigatory programme is to determine possible sources of recovery of funds for the creditors through calls on unpaid capital, reversible transactions or through legal pursuit for damages of officers of the companies including auditors. These investigations will also examine the possibility that criminal acts may have been committed by officers of the companies. Reports of these investigations are being forwarded to the Grand Court."

In a review of the assets Mr. Norman began with loans and overdrafts, given a listed book value of \$12million. He said the liquidators felt it would not be possible to recover more than 12 to 15 p.c. of these. A major reason was that a significant proportion appeared to be "back-to-back" arrangements in which, in fact, no net advances had been made. Such transactions might exceed \$7million. The quality of documentation of security for many of the loans was inadequate, he said, and he instanced the BVI Publishing Company, 60 p.c. owned by the group, and granted a \$5,000 overdraft facility, to be guaranteed by the sponsor. In fact the guarantee documentation was never completed and at the collapse of the banks the overdraft stood at \$73,000, which appeared to be irrecoverable.

ANEGADA LOSS: \$1MILLION

The group's big BVI project, the proposed development of the island of Anegada, was likely to involve a loss of about \$1million, Mr. Norman said. The results of the feasibility study became the property of the BVI Government when the agreement fell through, and the group's only asset on Anegada was a 50 p.c. interest in a small hotel, for which the liquidators had received an offer of \$1,500.

In Cayman the bank had made advances to several local businesses and the extent of these went well beyond sensible borrowing limits. Security was inadequate, and recovery of these loans would be lengthy and difficult.

Of the **Cayman Mortgage Bank**, listed with a book value of \$1.4m. but an estimated realisable value of \$250,000, Mr. Norman recalled that the larger and better part of the portfolio had gone to the debenture holders. Negotiations with these institutions were aimed at recombining all the mortgages and make them a more viable asset, but the Government's

Some grim amusement

DESPITE the underlying seriousness of the creditors' meetings, humour occasionally broke through. One of the U.S. attorneys whose proposals did not meet with much success commented, as he made a new attempt, "I've been turned down so many times I feel like a bedspread".

A smart piece of repartee came from liquidator Keith Norman whose detailing of the story of the bank's cattle ranch investment in Canada was interrupted by loud moo-like sounds from some nearby construction equipment. "It seems that one of our assets has arrived." He also got a ripple of laughter when asked what experience he had had as a liquidator. "Four harrowing months," he replied.

There was also some slightly sardonic laughter during the showing of the film, "The Interbank House Story", at the conclusion of the meetings. The film was said to have cost \$200,000 without a satisfactory version being produced, and the liquidators said that the creditors might like to see it "as an example of the wasteful application of depositors' funds."

Some creditors extracted grim amusement from remarks by former chief executive Jean Doucet during a filmed interview with director-producer Herrick Herrick which comprised much of the film. Towards the end there was a line which seemed to have special relevance as Mr. Herrick said, in a sequence filmed at the Cayman Mortgage Bank champagne party, "Well, Jean, all good things come to an end. . . ."

revocation of the bank licence had been another blow to the realisable value prospects.

These were comments by Mr. Norman on other items on the listed assets:

Mitchell's Creek Gardens: About \$3.25m. was expended on this project in 18 months, of which only about \$500,000 was construction work. The liquidators had had one cash offer — of \$150,000 down plus \$150,000 out of profits, if any. The liquidators were well advanced in negotiations with a locally-represented U.S. bank for the provision of sufficient funds to complete the project. The bank had also introduced an experienced developer willing to undertake completion and marketing of the project.

Governor's Harbour: The purchase of this large housing project in October, 1973, had been on terms involving \$200,000 cash down plus two loan debentures totalling \$1.5 million payable over seven years, and secured on the real estate and the guarantees of Sterling Bank. The group subsidiary, Governor's Harbour Ltd. had payables of \$175,000 and no revenue, but the debenture holder, Commonwealth Development Finance Company, had agreed to renegotiate the terms to enable the liquidators to retain possession for at least another year so they could continue meaningful negotiations with possible purchasers. The bank had invested \$1m. in addition to the original cash payment, most of it going on detailed plans for a type of development felt to be commercially uneconomic.

Property on Grand Cayman: Because of the expensive

furnishings and custom design it was unlikely that they would realise more than two-thirds of the cost of Interbank House. The other two major local properties, Watler Building and Club Inferno, would almost certainly be sold for their original purchase prices or higher. All the properties, however, were pledged for various sums, so the cash realised would be much less than actual value.

Property in Haiti: A total of \$225,000 had been invested on a 25-acre hotel site ten miles south-west of Port-au-Prince, though by inter-company manipulation this figure had been inflated to one of \$495,000 on the company books. On a quick sale the realisable value was not likely to exceed \$150,000, so the liquidators were looking into the possibility of building a hotel so that a larger benefit would accrue to the creditors.

Land in Mexico: This 65-acre site at Toluca had been bought by a subsidiary for \$900,000 but the increase to the book value of \$1.5m. was achieved by a series of inter-company manipulations of the original land purchase option agreements. The land had been professionally valued at from \$1 to \$1.4m., minus real estate commissions and a 50 p.c. profits tax, the incidence of which would have been substantially reduced had more adequate accounting records been kept by the Mexican subsidiary. Realisable value was unlikely to exceed \$600,000.

Shipping: The group had owned two freighters, the Dominion Pine (400 tons) and the Night Train (150 tons), which had been acquired with mortgages of \$100,000 and \$150,000, both guaranteed by Sterling Bank, and a \$150,000 promissory note. About \$90,000 had been spent on refurbishing the Dominion Pine, including fitting a dragline later declared to be unworkable and worthless. On return to Cayman after the banks' collapse both ships had been seized by the mortgagor and later disposed of on terms less advantageous than negotiated by the liquidators. The advice of Admiralty counsel was being sought as to the creditors' rights.

Real estate in Canada: A 381-acre farm near Quebec City, with 150 head of cattle (book value: \$695,000) had been brought into the group in 1971 as a part of the capital contribution of Canadian investors. Though a sound herd had been built up it had been a steady cash drain on the group; this drain had now been reduced but not eliminated. Canadian cattle prices had dropped because of U.S. import restrictions and the property had now been valued at Can\$200,000, though it had been placed with an agent at an asking price of Can\$400,000. If the cattle were sold separately the land might have better value as real estate.

Overseas offices: Over \$1m. had been spent in five years on the operation of these representative offices in Miami, Montreal, London, Geneva, Tortola and Houston. They had now all been closed and about \$50,000 realised from the disposal of leases and furnishings.

Investments: Though given a book value of \$1.4m., the portfolio of investments was valued at less than \$40,000. It contained none of the government bonds or blue chip stocks normally associated with bank portfolios. It included Mariculture, Ltd., Northwester Co. Ltd., BVI Publishing, Cayman Business Machines, Cayman Flying Service and other unquoted stock, also some over-the-counter U.S. securities whose value had declined very substantially.

Film Production: This was a good example of the general investment policy of the banks and the promotional nature of much of the investment of depositors' funds. Over \$400,000 had been spent, and the making of "The Interbank House Story" provided a cameo of this policy. Originally commissioned in late 1973, the first version was completed in

March, 1974, when the senior management completely rejected it and ordered a re-make. The second version was available in May, 1974, but again it failed to meet the requirements of senior management and a third version was commissioned. Camera crews were required to be sent to

Miami, Montreal, London, Tortola and even to film the nameplate office in Houston. Filming in Cayman was extended four days to include the champagne party which launched the Cayman Mortgage Bank. The total cost of the film exceeded \$200,000, but it was never completed.

Liquidators satisfied that extradition is possible

"A FULL-SCALE investigative programme of all bank operations" has been initiated with a view to civil and criminal legal action, the Sterling Bank creditors were told by the liquidators. "We do not know where the investigation will lead us," said liquidator **Keith Norman**. "We have so far been led into several areas where we have felt required to report to the court."

Attorney **Jim Macdonald** said the liquidators were required by the law to report such cases to the court, which would instruct them to institute such actions as appeared to be warranted. In reply to **Mr. John D. Jefferson**, he said that they had made a number of recommendations to the court but so far they had not been instructed to institute any prosecutions.

One of the questions submitted in advance of the meeting asked if any attempt had been made "to trace into the hands of any person, firm or company, money, gold or other valuables of which there is evidence of purchase and deposit but which is now missing?" Mr. Austin replied: "Preliminary investigations indicate that gold purchased on behalf of clients has been sold and certain funds given to the bank were not utilised for the purposes intended by the clients. These findings were presented to the judge of the Grand Court in October and since that time the matter has been undergoing active and diligent investigation by the proper government authorities."

He added that incidents of malfeasance, misfeasance, ultra vires acts and breaches of trust had been discussed but it would not be fitting to express an opinion at this time.

When **MRS. GAILYA ELDEMORE** asked about extradition, **Mr. Macdonald** replied, "We are quite satisfied that certain persons are subject to extradition at this time, and application will be made. There are certain countries in the world where you can't extradite, and sometimes only for specific purposes."

Another question asked if the liquidators had considered whether any acts of the directors or officers of the banks were ultra vires and whether any of them could be made personally liable for any losses. Mr. Austin replied that this matter was indeed under consideration, and later Mr. Norman made the point that in each case the liquidators had to decide whether the cost of collecting evidence to support a successful action was likely to be more than offset by the recoverable assets. If the facts would support a criminal charge they would also justify a civil suit. When Mr. Jefferson asked if the cost of investigation would dictate whether criminal charges were preferred, Mr. Norman replied that the cost of criminal proceedings would not fall on the liquidators.

Another creditor said that **Supt. Binney**, in charge of the

police inquiries, had told him he would need an accountant and might have to get the help of Scotland Yard. "We need to get on with these civil suits before these people squander or hide the assets," the creditor said. Mr. Norman replied, "The process is going on and we are collaborating fully within the limits imposed. One of these is that we don't waste creditors' money. The wheels of justice grind slowly; that is part of the protection of all of us."

Another area for possible legal action on which creditors' questions and comments centred was the accuracy of the balance sheets and profit and loss accounts published by the banks for the financial year 1973-74. A submitted question asked for the details of any mis-statements, but Mr. Austin replied that it was not really possible to answer without a full audit being undertaken. Because of the cost such an audit had not been initiated, but if mis-statements were indicated it would be undertaken, as in the case of the gold bullion.

Dr. Alan Applestein, attorney for a number of U.S. investors, pressed for a professional audit to be done and said that his group would be prepared to bear the cost of such an audit. He claimed it was impossible to rule out the possibility that the auditors for the bank, Pannell, Fitzpatrick & Co., had not exercised the due diligence required of them.

Another question alluded to the liquidators' reference to internal book-keeping entries inflating group assets and asked whether the external auditors had made proper checks in this connection? Mr. Landori-Hoffmann replied that as the liquidators had not yet called for the auditors' working papers it could not be established if the proper checks were made.

VALUES 'ARTIFICIALLY INFLATED'

Two properties said to have had their value artificially inflated in the bank records were the 25-acre beachfront hotel site in Haiti and the cattle ranch in Quebec. This was achieved, the creditors were told, by issuing capital stock the par value of which was significantly higher than the actual value of the option to purchase. In the case of the property in Haiti it in effect doubled the value by showing the value of the capital stock on the balance sheet.

Another submitted question referred to the apparent substantial increase in loans to customers in the period before liquidation and asked if any could be regarded as a fraudulent preference. Mr. Landori-Hoffmann replied that there had been a substantial increase, but so far no evidence had come to light that any person or firm benefited in an unjust or improper manner.

Referring to **Centramex Holdings Ltd.**, the company at the head of the complex organisational chart for the Interbank

group, **Mrs. Gailya Eldemire** asked what was the initial investment in that company. Mr. Landori-Hoffmann said that very little money went into it except for the inflated value of the Mexican land holding. The company was owned by Mr. Doucet, two other companies, Trans America Investments Corporation and Anglo-Dutch, and at least 24 minority shareholders.

The creditors were also told that so far five companies of the group were in liquidation — Centramex Holdings, Interbank House, International Bank, Sterling Bank and Trust, and Seven Mile Beach Estates. Others had not been put into liquidation because they might have sale value; if not, they would be liquidated in due course.

Two questioners asked whether the bank had been subject

to bank inspection, and were told that while the liquidators had no knowledge of any such inspection any questions on this must be addressed to Government.

On the matter of offset — allowing a debtor to set off what he owes the bank against what the bank owes him — no decision has yet been reached, the meeting was told. Mr. Macdonald said the Cayman winding-up law was based on the law operative in England until 1875, when it had been altered to cover the point. The alteration had not yet reached Cayman. "We are not at all sure whether set-off will be allowed," said Mr. Macdonald. "We believe it should be. We have researched the matter very thoroughly and put it before the court but there has been no decision yet."

Court actions by US creditors criticised

THROUGH the Sterling Bank creditors' meeting was dotted with grim references to criminal prosecution of former officers, some of the most rancorous remarks came in exchanges between the liquidators and a group of U.S. attorneys representing a large block of American investors.

One point of contention was the several legal actions begun in the U.S. and Canada against Interbank House subsidiaries. The attorneys portrayed these as actions taken in the general interest of all creditors to secure assets which had been neglected by the liquidators, but this was disputed by the liquidators, whose own attorney, **Mr. J. D. Macdonald**, pointed out that in fact the actions contravened Cayman law. This, he said, stipulated that in a winding-up no creditor could initiate an action without leave of the court.

Mr. Macdonald said such actions could be viewed as an attempt by a group of creditors to secure a special position to the disadvantage of the general body of creditors. They put the liquidators to the added expense of engaging counsel to contend the actions. In any case, Cayman law as well as that in other countries, required that any assets secured by such actions were to be considered as held in trust for all the creditors.

Mrs. Gailya Eldemire, one of many Caymanian creditors attending the meeting — only a few of whom took any part — made one of her several effective contributions during this exchange. She said she found it hard to believe, in this material age, that anyone would freely act to help the general body of creditors. When the court had appointed the liquidators to be their representatives she felt that anyone else taking action was probably acting for some creditor who was paying him.

JUDGMENT BY DEFAULT

Dr. Alan Appelstein, one of the Florida attorneys, said he was representing creditors in two actions in Dade County, in one of which judgment by default had been obtained against **Mr. Jean Doucet**, **Mr. Marcel Dion** and other former officers of the bank. "It is a poor situation when an independent attorney

can get a judgment when our well-paid legal staff has not yet taken action," he said. Many of the assets secured were assets which would never have been found by the liquidators. They involved ex-directors, their affiliates and agents, and had now been "tied up" for the benefit of the creditors.

When **Mr. Keith Norman** asked if he was saying that he had managed to secure control over assets which the liquidators were unable to secure, Dr. Appelstein replied: "I have never stated I know of assets that you don't. The assets which have been seized by the various counsel are on public record and you well know that."

Mr. Norman: That is scarcely an answer to my question.

Another Florida attorney, **Mr. Walter Lehman**, said he was appearing in a class action, for the benefit of all creditors, which was against the personal liability of all directors, officers and employees of the Florida subsidiary, Interbank House Inc. While the company might have no assets, the officers might and the claim was against their personal estates. Florida law prohibited attorneys in a class action from receiving fees except as determined by the court.

Subsequently, Dr. Appelstein agreed that no assets of any officer of the bank in the U.S. had been secured on which judgment could be levied.

CONFLICT-OF-INTEREST CLAIM

A second issue of contention on which the Florida attorneys were particularly vocal was whether or not there was a conflict of interest in the appointment of **Mr. Robert Landori-Hoffmann**, partner in a Montreal firm of chartered accountants, as one of the liquidators. His critics referred to his previous connection with the Interbank group, and one asked him: "Do you believe you can fairly administer this company and possibly bring criminal charges against a man with whom you had a confidential relationship?"

Mr. Landori-Hoffmann replied that he had been auditor of the group's Canadian companies and had acted for Jean Doucet where his knowledge of languages was useful. "I have known Mr. Doucet for a long time, and it is correct to say that

Creditors gasp at executives' expense accounts and liquidation cost

TWO SETS of figures given in reply to questions caused some gasps of astonishment among creditors at the Sterling Bank meeting. One set listed the expense accounts of the bank's officers in the 12 months up to liquidation — total \$270,619; the other detailed the cost of the liquidation so far — total \$520,000.

The expense account figures were said to exclude payments for commercial air fares, which the liquidators said had not yet been calculated — though it was certainly as much again. These were the figures given as payments to individual officers: **Jean Doucet** \$160,000; **A. Turner** \$850; **P. J. King** \$4,980; **R. D. Fisher** \$10,000; **Daniel van Dreunen** \$30,000; **Marcel Dion** \$3,000; **C. Lockyer** \$8,500; **P. Pemberton** \$9,600; **M. Shields** \$700; **I. Middleton** \$4,840; **C. Bancroft** \$3,349; **T. Diakow** \$2,300; **M. Osborne** \$7,350; **R. Pocock** \$2,800; **R. Mackin** \$16,000; **E. Lesmi** \$5,750; **C. Panton** \$600.

Liquidator **Robert Landori-Hoffmann**, who gave the figures, said that they were subject to final verification. They were taken from the records of the two banks, and it was known that some officers also received payments from related companies abroad.

Replying subsequently to questions by **Mrs. Gailya Eldemire**, Mr. Landori-Hoffmann said that initially Mr. Doucet had only taken a low salary — \$20,000 to \$24,000 a year — and later this increased to about \$40,000.

"Plus all the travelling expenses and the Learjets, etc.," added Mrs. Eldemire.

LIQUIDATORS' FEES

Liquidator **Michael Austin** answered the question on the cost of liquidation to date, giving these details of fees paid: **Richard Graham-Taylor** (one of the original three liquidators; he later resigned) \$4,700; **Peat, Marwick and Mitchell** for the services of Mr. Austin \$20,875; **Robert Landori-Hoffmann** \$32,490; **Keith J. Norman** \$40,925; **J. M. Macdonald & Associates** \$54,246.

Mr. Austin said that other expenses, including professional fees, salaries and wages, rent, interest, general operating expenses and travel totalled \$366,700, making a round total of \$520,000. It would be necessary to apportion these costs between the two banks, and it was estimated that the Sterling Bank portion would be 60 p.c., or about \$310,000.

Replying to expressions of criticism of the cost of four months' liquidation, Mr. Landori-Hoffmann cited costs in other countries. Compared with the C\$50 an hour being paid the liquidators here, the rate in Canada was Can\$75, and he understood the rate in the States was US\$90 an hour. Magis-

trate Field pointed out that the rates had been set by the Grand Court.

When Mrs. Eldemire commented that the payments reflected the hours worked, Mr. Norman agreed and said he had been engaged full time on the liquidation since it started.

EXPENSE PAYMENTS

At the request of a U.S. attorney a further breakdown was given of the expenses and fees paid to the liquidators and their advisors. These showed that Peat, Marwick & Mitchell had received a further \$70,000 for staff assistance, Mr. Norman had received \$7,000 for staff, Mr. Landori-Hoffmann \$10,000 for additional staff help, and **Pannell, Fitzpatrick** \$15,000 for audit assistance. Of the fees paid to J. D. Macdonald & Associates, \$35,000 had been paid in fees to Mr. Macdonald and \$17,000 to **Mr. Ian Paget-Brown**, who also had received \$1,471 expenses.

A further \$2,386 had been paid to Mr. Macdonald's office for court fees, court costs, and secretarial expenses, while engagement of counsel in Canada and the U.S. had cost \$4,000. The local law firm of **Hunter & Hunter** had been paid \$1,700 for assistance in drafting documents. Travel expenses paid to the liquidators were: Mr. Norman \$5,000; Mr. Landori-Hoffmann \$2,500; Mr. Austin \$1,350.

Replying to a further question, Mr. Austin said it was impossible to estimate future costs of the liquidation, which would depend on the speed at which the assets could be realised, the amount of investigative work required, the amount of litigation which might develop and many other such factors. The monthly rate of disbursement at present was \$60,000.

The creditors were also told that the total cost of organising the creditors' meetings was in the region of \$75,000.

Nearing the close of the Sterling Bank meeting, **Mr. Roger Webster**, regional director of the Commonwealth Development Finance Company, said he understood that the terms of remuneration for the liquidators gave them the right to take 1 per cent each of the realisation of the liquidation. He did not know if this was 1 p.c. of the gross before paying secured creditors or of the net realisation before payment to the unsecured creditors.

Mr. Webster made his comment in the debate on the motion to form a committee of inspection, which he sought to amend to provide that no payment on realisation be made to the liquidators other than the salaries they were drawing, which he felt represented a fair return for the work they were doing. The chairman said this would have to be a separate motion, but no further action was taken on Mr. Webster's suggestion, and there was no other comment on his remarks.

when you are a consultant in a professional capacity you form an opinion of a man and get to know him, but I see no conflict of interest. The majority of things I discovered here as liquidator were unknown to me, and I would not hesitate to prosecute, not only Jean Doucet but others responsible if it is necessary."

He denied that he had ever been in the role of agent or broker for Mr. Doucet, specifically in the Mexican land deal which was purchased before he had any connection with the group. His only action in respect of that land was in late 1973 when Mr. Doucet asked him to fly to Mexico to stop government authorities seizing the land for non-payment of taxes. He was there until June, 1974, receiving C\$1,500 a week from the Mexican company.

Mr. Macdonald, the liquidators' attorney, pointed out that this matter had been investigated before the Grand Court had approved Mr. Landori-Hoffmann's appointment.

REMOVAL ATTEMPTS FAIL

Mr. Macdonald, also the target of some criticism, mostly based on the fact that his law firm had received over \$54,000 in fees for four months' work on the liquidation, told a questioner that he had never previously had any connection with the Interbank group and had never done any work for them or Mr. Doucet.

Motions to remove Mr. Landori-Hoffmann and Mr. Macdonald were defeated by large margins. The voting prompted another point of contention, for the liquidators had proxies for the International Bank (3.96million), inter-house companies (0.66m.) and other creditors (2.1m.), which the chairman of the meeting, Magistrate **Frank Field**, ruled they could vote as they saw fit. In fact the votes in favour of the motions to remove the two men were defeated by almost 2 to 1 without counting the liquidators' proxies.

By an even larger margin the meeting voted down a resolution calling for a committee of creditors to be formed. There was critical comment on the fact that the liquidators, in their first communication to the creditors, had suggested that such a committee be formed, but were now opposing it. The liquidators explained that the change of view had followed consultation with the Grand Court judge and was based on the belief that naming of a committee could be a breach of the confidentiality desired by bank clients.

'PARAGONS OF VIRTUE' NEEDED

Not all the creditors accepted the validity of this, and one or two spoke out firmly in favour of having a committee. Some of the views against were summed up in a speech by **Mr. Roger Webster**, regional director of Commonwealth Development Finance Company. Of the possible members of such a committee he said, "They would have to be honest, they would have to be seen to be honest, and although creditors themselves they would have to bear in mind the interests of all other creditors, and they would have to be frequently available in Cayman. I don't believe such paragons of virtue exist. I am certain I have not heard anyone today — with certain possible exceptions, most of them not on the floor — who can comply with all these characteristics."

There was a vote of 1,476,260 for the formation of a committee and 11,062,310 against.

The only resolution put to the meeting which was accepted was one calling for the negotiation of an early sale of all the assets of the bank as a package or individually, at values not less than those estimated in the notice to creditors. During the debate one creditor followed up earlier heated protests at the liquidators' estimate that it might take six to 12 months to complete

the liquidation. "By that time there won't be anything left but debris," he said.

Mr. Norman: "There's a whole lot of debris now, but some people do consider it a worthwhile package. If we sell as a package and there are no on-going liabilities there will be a distribution and the liquidation can terminate." He said it was difficult to foresee how long it would take if the assets had to be disposed of individually; it might be one or two years.

More than one creditor referred during the meeting to the need to ensure that whoever purchased the bank assets was not a previous officer. Said one creditor: "I have known of other companies, to my sorrow, which have declared themselves bankrupt profitably, leaving the investors holding the bag. A parallel could be one in which the group buying the Interbank package could turn out to have Mr. Jean Doucet as president." Mr. Norman replied that not only the liquidators but the court and the government would wish to know the credentials, repute and financial banking of any purchaser.

The resolution was approved by a vote of 11.4million to 2.1m. The liquidators justified their use of their proxies for International Bank by saying that a similar motion had been accepted by a large margin by that bank's creditors the previous day, when the liquidators abstained from voting their Sterling Bank proxies, totalling \$5.1m. They had taken this to be a clear instruction on how they should vote the proxies at the Sterling Bank meeting.

Stipendiary Magistrate **Frank Field** was made available by Government to be chairman at both meetings of creditors. At the request of a U.S. attorney he made it clear that he was not present in an official or legal capacity and did not regard the meetings as courts of law, though the rules for their conduct had been laid down by the Grand Court.

The meetings were tape-recorded, and it was stated that the Grand Court judge would decide what portion of the transcript should be made available to creditors. The chairman rejected a request by a U.S. attorney that a second tape-recording should be allowed "to make sure there is no mechanical defect and no transcribing errors." ■

Foundation for Caribbean formed

UNDER the auspices of the Trust Company of the West Indies Limited (a Jamaican financial institution with representative office at 80 Wall Street, New York City), several businessmen and professionals have formed the Foundation for the Caribbean.

Richard G. Schneider, jr., Harvard tutor and chairman of the foundation's board of trustees, announced that the foundation would begin immediate operations with a "Books for the Caribbean" project. The project goal is the supplying of 10,000 books to schools and universities in the Caribbean area. The foundation will work with major North American publishers on the project.

Mr. Schneider also announced the formation of an international board of advisors for the foundation, consisting of himself; of co-trustee **Ralph Fucetola III**, a North Arlington, N.J., attorney; **Mark Brady**, an economics instructor from Frinton-on-Sea, England; **Ronald Schwartz**, of Paris, France, European representative of the Trust Company of the West Indies; and the Rev. **William Chaisson**, of Morris County, N.J.

The NORTHWESTER
FEB 75

The & rare & the wonderful



Utilising the same traditional skills that enabled their great and great, great grandfathers to produce intricately beautiful turtle shell jewellery items, while working the turtle boats, these and other artisans are now creating unique and wonderful jewellery pieces from rare black coral, wild turtle shell, the

beautiful Queen conch and many other native gem materials. For all that is rare and wonderful, visit our showroom and workshop in the "Jewellery Factory", downtown, George Town.

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And Costa Ricans are gregarious, full of life. Come to COSTA RICA... in this country we love people.





Our national flag and song

IN RESPONSE to repeated requests from readers, we are featuring this month a full colour reproduction of the flag of the Cayman Islands. The Ensign was adopted in 1959 shortly after the Cayman Coat of Arms was designed. Prior to that the island had used the British Flag for official occasions.

On a background of dark blue, it features the Union Jack in the upper lefthand corner and the Coat-of-Arms reproduced on a circular white ground on the right. The three green stars in the latter represents the three islands, bordered with gold. The pineapple in the crest represents the connection with Jamaica and the green turtle sitting on a coil of rope reflects the Cayman Islands' reputation for its turtles and world-famous turtle farm. The Lion represents Great Britain and the background of white and blue wavy bands represents the sea. The motto, "For He hath founded it upon the seas", is taken from Psalms 24 verse 2.

THE NATIONAL SONG

The beautiful words of the National Song of the Cayman Islands were written and put to music by one of Cayman's best-known writers of poetry and song — the late **Mrs. Leila Shier**. An organist in the Presbyterian church, she had a great love and talent for music and spent much of her spare time putting her inspirations into words.

"Beloved Isle Cayman" was composed in 1930 and she sang it for years accompanying herself on the guitar before it was finally adopted as the National Song.

Caymanians, many of whom are the descendants of buc-

caners and shipwrecked mariners, have a sea-faring tradition, and she captured in the words their love of both home and sea.

"BELOVED ISLE CAYMAN."

O, land of soft, fresh breezes, of verdant trees so fair
With Thy Creator's glory, reflected ev'rywhere.
O sea of palest em'rald, merging to darkest blue,
Whene'er my thoughts fly Godward, I always think of you.

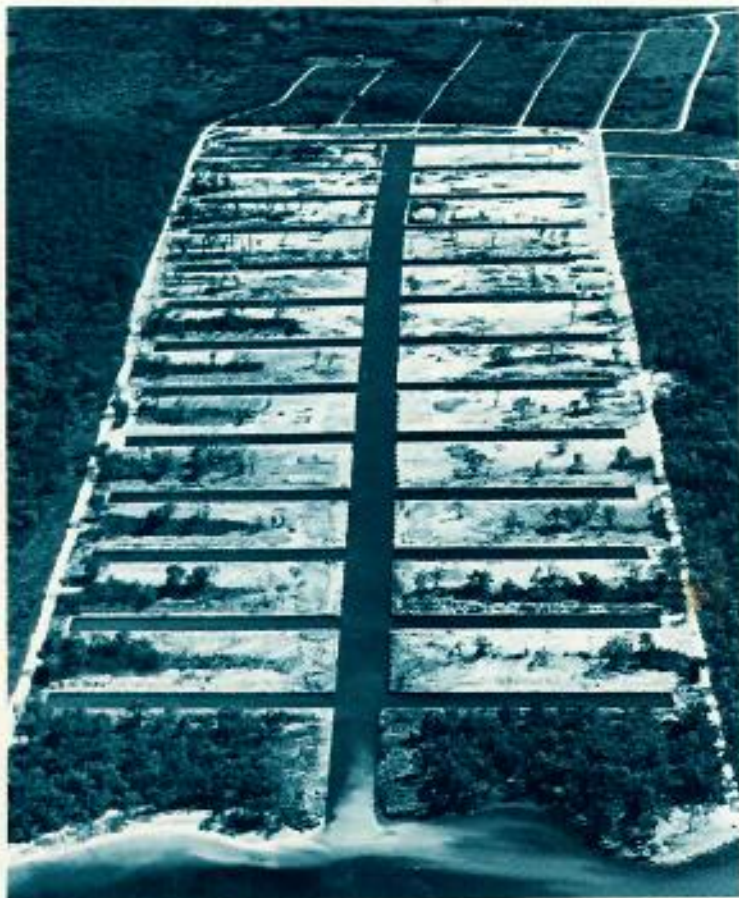
Chorus.

Dear verdant island, set in blue Caribbean Sea,
I'm coming, coming very soon. O beauteous isle to thee.
Although I wandered far, My heart enshrines thee yet
Homeland fair Cayman Isle, I cannot thee forget.

Away from noise of cities, their fret and calking care,
With moonbeans' soft caresses, unchecked by garish glare.
Thy fruit with rarest juices, abundant rich and free,
When sweet churchbells are chiming, my fond heart yearns
for thee.

When tired of all excitement, and glam'rous worldly care,
How sweet thy shores to reach, and find a welcome there.
And when comes on the season, of 'peace, goodwill to man,
Tis then I love thee best of all, Beloved Isle Cayman.

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GRAND CAYMAN ESTATES LTD. developers of
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