

Barnard College

DEPARTMENT OF BIOLOGICAL SCIENCES

COLUMBIA UNIVERSITY, NEW YORK 10027

April 4, 1974

Dr. Zoula Zein-Eldin
National Marine Fisheries Service
Gulf Coastal Fisheries Center
Galveston Laboratory
4700 Avenue U
Galveston, Texas 77550

Dear Dr. Zein-Eldin:

I have received, from various sources, a good deal of correspondence concerning the paper that Dr. Salazar read for me at your recent mariculture conference. The possibility has been raised of publishing it in the conference proceedings. I have no idea whether the editor and executive board have decided to do so; but if they have, I wanted to tell you that I would be happy to see it reprinted by the Society. My editor at American Scientist informs me that the journal has no objections to this, provided the usual credit is given. If it is republished, I would also like a brief statement mentioning that discussion of the paper was omitted because the author was not present to defend it.

You will find a copy of the paper enclosed. Please note that the photographs, although nice, are not an integral part of the paper and need not be reproduced.

Sincerely yours,


David W. Ehrenfeld
Associate Professor

P.S. My address and title after July 1 will be:

Professor of Biology
Cook College
Rutgers University
New Brunswick, N.J. 08903

February 28, 1974

Dr. David Ehrenfeld
Department of Biological Sciences
Barnard College
Columbia University, New York 10024

Dear Dr. Ehrenfeld:

I appreciated receiving copies of your correspondence with Paula Chaser of the Audubon Society. Personally I considered the Newsweek advertisement to be relatively restrained in view of some of the other promotional hogwash that has crossed my desk. However, I certainly do hope that she will follow through and apply pressure for the halt of this type of misinformation. I may not have mentioned it in my earlier correspondence, but none of the 19 females that produced eggs in captivity had been reared on the farm. All were mature adults when captured from the wild and were subsequently held for varying lengths of time ranging up to 3 years. This information was given to me by a graduate student consultant and a full time farm biologist who were both present throughout the nestings.

Your American scientist article has been very well accepted here in Hawaii and has certainly helped to clarify the present status and potential of turtle husbandry. It has and I am sure will continue to make my efforts for the conservation of the species considerably less difficult. Please forward several reprints when they become available.

For reference purposes I have enclosed copies of correspondence which I am sure you will find interesting.

Aloha and best wishes,

George H. Balazs

GHB:ah

encs

Barnard College

DEPARTMENT OF BIOLOGICAL SCIENCES

COLUMBIA UNIVERSITY, NEW YORK 10027

February 25, 1974

Ms. Paula Chaser
Public Information Assistant
National Audubon Society
950 Third Avenue
New York, New York 10022

Dear Ms. Chaser:

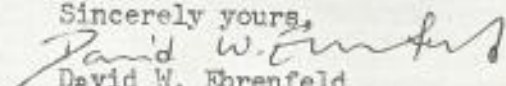
I was quite interested in your letter of February 22. The advertisement that you sent me is indeed false and misleading. Mariculture, Ltd. does not have 100,000 "captive-bred" turtles in Grand Cayman, or anywhere else. The fact that the vast majority of their stock comes from eggs taken from natural nesting beaches is a matter of public record. They have a few hundred or thousand turtles that do come from eggs laid by their own captive females. However, even these turtles cannot be proven to be "captive-bred" since there is no definitive evidence that the captive females that produced them were fertilized by their own captive males (females store viable sperm for years). Of course this last objection does not apply if the breeder females have been raised from immaturity by Mariculture, Ltd. At best, therefore, they can claim an insignificant percentage of "captive-bred" animals. It is my opinion that these represent a demonstration group for publicity purposes, since Mariculture does not at present have the capability of producing all fully captive-bred animals, and since, as I stated at length in my paper in American Scientist, the probability that they will ever have complete control over the full life cycle of Chelonia mydas to supply their whole commercial operation is vanishingly small.

I believe that action against the advertiser might be warranted for the following reason:

If Mariculture, Ltd. continues to rely on wild populations of endangered sea turtles for its stock, there is a good chance that Federal and state laws and regulations may make it impossible ^{for them} to operate in the United States. If this happens, it is problematical whether they could continue to (or start to) return a profit on their commercial investment. Thus by stating that they are breeding all their own animals (100,000) when, in fact, they are not, is a way of misleading the potential investor into thinking that Mariculture, Ltd. is a much safer investment than it actually is. This seems to me to be a desperation tactic, and I hope that the Audubon Society does something about it. As a member of the Society, I offer my services as a consultant on this matter free of charge at any time.

cc: Drs. Carr and Balazs
and Dr. King

Sincerely yours,


David W. Ehrenfeld
Associate Professor

Barnard College

DEPARTMENT OF BIOLOGICAL SCIENCES

COLUMBIA UNIVERSITY, NEW YORK 10027

December 17, 1973

Mr. George H. Balazs
Marine Biologist
Hawaii Institute of Marine Biology
P.O. Box 1346, Coconut Island
Kaneohe, Hawaii 96744

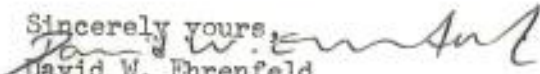
Dear Mr. Balazs:

Thank you for your letter of December 13. I agree with you entirely that there should be no farming of sea turtles "until basic biological problems have been solved." I would go farther, however, and state that in my opinion the basic biological problems associated with sea turtle mariculture are not amenable to solution, at least as far as large-scale (more than 10,000 hatchlings per year) commercial enterprises are concerned. My argument is presented in great detail in the enclosed paper. Until all the ecological, economic, and conservation-related problems with sea turtle mariculture that I discuss in my paper are overcome, I see no justification in spending public funds on a project that is only likely to hasten the extinction of the world's most valuable reptile. As stated in the paper, my objections do not apply to small-scale, non-profit, pilot studies that are supported by federal or private conservation funds. Such pilot studies should have the objective of releasing most or all of the captive turtles in waters that already contain turtles of the same subspecies and age class, after they have been raised to a size that will assure them of protection from most predators.

Since there were some minor changes in the proof of the article, I must ask you to refer to the enclosed paper, should you quote it, as a draft copy of a paper to appear in American Scientist, etc, rather than a preprint. I also enclose the proofs of the picture captions.

I suggest that you write to Dr. Archie Carr (Dept. of Zoology, University of Florida, Gainesville, Fla. 32601) and ask him for copies of his correspondence with Mr. Tuttle and Mr. Fisher -- explain your own stand to him. You might also get in touch with Dr. Wayne King, Curator of Reptiles, N.Y. Zoological Society (Bronx Zoo), Bronx, N.Y. 10460, and ask for any relevant material (he is very knowledgeable about green and hawksbill turtle protection, and an outspoken opponent of sea turtle mariculture).

Please keep me informed about your progress (by the way, you forgot to enclose the copy of your testimony at the public hearing). Should you see John Bardach, send him my best regards, and tell him that as of July I will be Professor of Biology at Cook College, Rutgers University, New Brunswick, N.J. -- a move that I am very excited about.

Sincerely yours,

David W. Ehrenfeld
Associate Professor

December 13, 1973

Dr. David W. Ehrenfeld
Department of Biology
Barnard College
New York, N. Y. 10027

Dear Dr. Ehrenfeld:

Today I received the November-December issue of *American Scientist* and was very much encouraged to learn of your forthcoming article entitled "Conserving the edible sea turtle: can mariculture help? As you may be aware, efforts are presently underway here in Hawaii to obtain protection for green turtles found around our major inhabited Islands. I have enclosed a copy of testimony which I recently presented at a public hearing on this matter. Although a portion of my research deals with the nutritional aspects of captive green and hawksbill turtles, I am not in favor of farming ventures until basic biological problems have been solved. I suggest that your forthcoming article will explore the entire area from this prospective in view of your statements in *Biological Conservation* (1970).

Unfortunately, a small commercial organization here in Hawaii is seriously investigating the possibility of establishing a green turtle farm on the Island of Hawaii. Fifty thousand dollars for pilot studies have already been granted by the State for this work. The proposed farm would be established in an area where sugar cane has recently gone out of business, therefore the new business would supposedly provide jobs for the unemployed. The "successes" experienced by Mariculture, Ltd. were pointed to extensively throughout their proposal.

It would be of great help if I were able to receive a prepublication copy of your article. I feel confident that it will contain vital information of direct benefit to my efforts in Hawaii. Your assistance in this matter will be greatly appreciated.

Sincerely,

George H. Balazs (M.S.)
Jr. Marine Biologist

GHB:ah
enc

January 2, 1974

Dr. David W. Ehrenfeld
Associate Professor
Barnard College
Columbia University
Department of Biological Sciences
New York, N. Y. 10027

Dear Dr. Ehrenfeld:

Thank you very much for your letter of December 17 with draft copy of the AMERICAN SCIENTIST article. I will greatly welcome the printing of this paper as press releases and promotional publications offered by the Grand Cayman enterprise and their financial backers have presented a biased and distorted view on how to "save" the green turtle. If reprints of your article become available before the distribution date, please forward one so that I may duplicate copies for concerned individuals here in Hawaii.

I have been in communication with Dr. Carr for the past year and last week received copies of the correspondence you mentioned. Again, this is the type of information and reasoning that should be made available for all segments of the public. Too many individuals express a belief that the turtle conservation battle has now been won because of Mariculture's activities. The enclosed article from Saturday Review/World is one example. The attached answering letter was written by my wife under her maiden name with my assistance. The editor has indicated that a portion may be printed if and when space is available. For your information I have also enclosed a recent newspaper article on Hawaii's sea turtle situation.

On January 21 I will attend a mariculture conference in South Carolina. It is my understanding that several papers dealing with Grand Cayman work will be presented. I will be interested to see if any discussions take place on conservation. If all goes as planned, I may spend several days in Grand Cayman visiting the facilities and hopefully getting a first hand insight on the operation.

Dr. David W. Ehrenfeld
Page two
January 2, 1974

Dr. Bardach was pleased to learn of your forthcoming position and he sends his best wishes for the new year.

Sincerely,

George H. Balazs
Jr. Marine Biologist

mk

Enclosures



University of Hawaii at Manoa

Hawaii Institute of Marine Biology
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744
Cable Address: UNIHAW
August 20, 1974

Ms. Paula Chaser
Public Information Assistant
National Audubon Society
950 Third Avenue
New York, N.Y. 10022

Dear Ms. Chaser,

As you may recall, I corresponded with you during February and March concerning the activities and promotional programs of the green sea turtle farm, Mariculture, Ltd., located on Grand Cayman Island. You had expressed concern to Dr. David Ehrenfeld (author of the AMERICAN SCIENTIST article "Conserving the Edible Sea Turtle: Can Mariculture Help?") over a Newsweek magazine advertisement which stated that the farm possessed 100,000 captive-bred animals. During the latter part of November I will participate in a meeting of the IUCN Survival Service Commission's Marine Turtle Specialist Group at the University of Florida. Problems relating to the conservation and commercialization of turtles will be dealt with. After the meeting the Group will travel to Grand Cayman Island and make an evaluation of the conservation claims of the company.

I am presently unaware of what your subsequent findings were concerning the Newsweek advertisement or what actions you may have initiated. In order to keep myself fully informed on the matter of Mariculture, Ltd., I would be most appreciative if you could bring me up-to-date on the information you accumulated. Thank you very much for any assistance you can give me in this matter.

Sincerely,

George H. Balazs

George H. Balazs

February 28, 1974

Ms. Paula Chaser
Public Information Assistant
National Audubon Society
950 Third Avenue
New York, New York 10022

Dear Ms. Chaser:

Dr. David Ehrenfeld has recently passed on copies of correspondence with you concerning the advertisement in Newsweek magazine. Although this misinformation further adds to the problems of green turtle survival, it is nevertheless not at all surprising in view of previous hogwash that has appeared in print on the subject. The most deceiving items are brochures that the farm itself distributes to visitors and prospective stockholders. I personally documented this point on a 4-day visit to Grand Cayman Island during January.

I have enclosed several copies of correspondence dealing with this subject that will be self-explanatory. Please feel free to call upon me if I can be of assistance. Incidentally, I was informed by farm biologists that none of the 19 females that had nested in captivity were captive reared. All were obtained from the wild as adults and had been held in captivity for varying lengths of time ranging up to three years.

Sincerely,

George H. Balaza
Jr. Marine Biologist

GHB:md

Encls.

February 2, 1974

Dr. David W. Ehrenfeld
Department of Biological Sciences
Barnard College
Columbia University
New York, N. Y. 10027

Dear Dr. Ehrenfeld:

My four day visit to Grand Cayman Island proved to be quite valuable as I had the opportunity to discuss at length the course that Mariculture Ltd. is presently pursuing. In addition to John Hendricksen, Alan Parker, Marlin Simon, Julie Booth and Bill Rainey, several major stock holders were also on the island and open for discussion. Official meetings of the "Department of Conservation and Research" were held at the farm and, from what I gathered, considerable concern for corporate survival exists. The major points appear to be 1) the inclusion of the green turtle on the endangered species list, 2) the passage of a pending California Assembly Bill (No. 1502, which was introduced by Assemblyman MacGillivray) that would allow "farmed" turtles to be sold in that state, and 3) the expansion to a new farm in Puerto Rico several times the size of the present one.

It seems highly likely that both the green and the loggerhead will be listed as an endangered species, however none of us should feel over confident in this matter. I am compiling all my information on the green turtle in the Hawaiian archipelago and will send it to Washington within the next week. I am urging select individuals of scientific prominence here in Hawaii to do the same. I hope that those persons concerned about and involved with marine turtles across the country will have the opportunity to submit testimony. Much to my dismay, I have found upon my return that the State Board of Land and Natural Resources has again delayed enactment of our proposed marine turtle protection regulation. It would seem that the State will continue to drag both feet in this matter, apparently appeasing several special interest groups.

Undoubtedly efforts will be made to exempt "farmed" turtle products from importation restrictions at the Federal level. After my Cayman visit I am convinced more than ever, as I am sure that you are, that this will have a devastating effect on the survival of the

Dr. David W. Ehrenfeld
February 2, 1974

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species. The promotion of turtle products by Mariculture is being conducted from a strictly economic point of view, with no thought to the biological implications. In short, the business members of the Mariculture team are "nice fellows" who for some god unknown reason think that marine turtles are chickens. The scientific members can be divided into two groups, those that know very little about turtles and those that have previous experience and knowledge but, unfortunately, have not focused the entire matter into proper perspective.

I believe that the Department of Interior should be informed as to why farmed turtle products should not be exempted if endangered status is obtained. A copy of your paper along with up to date comments on recent laying of eggs in captivity would surely be valuable in this respect. Certainly I will be communicating my own thoughts on this matter.

Allowing Mariculture products to be sold in California is of major importance to the company because 1) it will set a precedent and other states will be more likely to follow suit, e.g., the domino theory, and 2) Polly Bergen will buy their oil, thus representing the difference between profit and loss. I was surprised to hear this latter point as it was my understanding that Miss Bergen made the decision long ago to discontinue her "essence of turtle" line. In any event, letters to both her and the California Legislature are certainly in order.

The plan to build an additional larger turtle farm is enough to stagger the imagination. I was informed that, because of economic principles which only the Board of Directors could understand, such an expansion was absolutely necessary if the enterprise were to survive. No direct answers were given to my question of "where will the eggs be taken from?", however there was brief mention of the Indian Ocean. Needless to say, I found it difficult to sleep that night. Incidentally, most all of my conversations were carried out over dinners and drinks as I was fortunate to be lodged at the same hotel as the Mariculture people. At my urging, several hours of one evening were devoted to examining the promotional garbage which has been emanating from the farm. This has been a very sore point with me, as I have received numerous letters from individuals who have heard of the "successes" of Mariculture and want to duplicate their operation in the Pacific. Early in the talk I was informed that the brochure "New Hope for the Green Turtle" was a mistake and had been withdrawn from circulation. All good and well, however one wonders how much damage such misinformation created and will continue to create as remaining copies are passed between friends. As the

Dr. David W. Ehrenfeld
February 2, 1974

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brochure entitled "a Mariculture, Ltd. supplement to the Cayman Islands Northwester (October, 1973)" was still being distributed to visitors at the farm, I felt obligated to point out what I believe to be falsehoods in this literature. Included were statements such as "They have recently completed the reproductive cycle of the green turtle in captivity...", "this unique operation is poised for an expansion on to a scale which will enable it to make a significant contribution to the world's food supply", "farming-the-sea technique", "Mariculture has compiled a proud record of action to aid the survival of the species", "This simple exercise in conservation raises the survival rate at least 500 times!" and "Now that the turtle farm has the capability of producing its own egg supply..." to name a few. I received the impression that some individuals were not aware of these statements and had not even taken the time to read their own literature. Whatever the case, there was very little defense for these statements other than references to economic problems and the possible loss of hard earned capital that had been invested. Another point of discussion was the concept of creating a demand for their products. This matter was dismissed by the explanation that the demand was already there and they were simply meeting it. Hard for me to believe that the housewife in Nebraska really wants a polished shell on her wall or a turtleburger on the dining room table!

I was sorry that I could not stay longer than four days. The Cayman people were very interesting and I spent two mornings at the turtle market and butchery. I was fortunate enough to meet the captain of a turtle boat and have a long talk with him. Certainly much could be learned from these people about turtles if one had the time and money to conduct a study. It is not uncommon for turtles to be taken off Nicaragua that bear tags, apparently place on the animals in Costa Rica. Although I feel certain that many tags are sent in for the reward, I recorded three numbers at the market place and will forward the information to Dr. Carr.

Julie Booth asked that I tell you how pleased she is that her photo will be used on the cover of American Scientist. Her plans call for staying on at Grand Cayman until February 11th. I believe that Mariculture would like to have her stay longer and do work in the breeding pond, however I doubt if she will.

I will be looking forward to receiving copies of the article.

Very best wishes,

George H. Balazs

GHB:md

cc: Archie Carr

February 4, 1974

Dr. Archie Carr
Graduate Research Professor
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

As you are probably already aware, Dr. Ehrenfeld allowed me to present his forthcoming paper "Conserving the Edible Sea Turtle: Can Mariculture Help?" at the recent World Mariculture Society Meeting which was held in Charleston, South Carolina during the week of January 21. After the conference I spent four days on Grand Cayman (at my own expense) attempting to gain insight on the motivations, aims and status of Mariculture, Ltd.

I was received in a very hospitable manner and was fortunate enough to have many long discussions with employees and consultants in addition to a major stock holder. I have conveyed some of the impressions received on this trip in a letter (February 1) to Dr. Ehrenfeld of which a copy has been sent to your office. As I have mentioned in past correspondence, promoters in Hawaii are keen on creating another turtle farm patterned after the Grand Cayman operation. State support is being requested and I fear that the bureaucrats may believe the ridiculous statements put forth in the proposal and therefore pour taxpayer's dollars into the project. In my opinion, the cause for all this excitement by the promoters to start a turtle farm stems from the promotional literature which has been widely distributed by Mariculture, Ltd., and accepted as the truth throughout the U. S. and many countries of the world. The misinformation, bending of the truth and out-and-out garbage presented in these brochures has made the average person who knows very little about sea turtles feel confident that these "once endangered reptiles are now safe due to the fine work of that sea turtle farm in the Caribbean." I have documented this through my own experience by spending a day at the farm and casually talking with visitors from several of our States. All had read the literature given to them at the gift shop and had absolutely no reason to believe that it was not a factual account of the company's activities. One might speculate that the Securities Exchange Commission would be interested in this case if stock were offered for sale by U. S. brokers.

Dr. Archie Carr
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February 4, 1972

In any event, I have learned much from my Cayman trip and now must utilize my information and abilities to combat any attempts to build a prematurely conceived Hawaiian turtle farm stocked with hatchlings from the Caribbean, the Trust Territories or any one of a number of locations that the promoters have suggested as a source for their "seed" stock. To compound matters, the State Board of Land and Natural Resources has again delayed action on our pending marine turtle protection regulation.

Although trying not to be over confident, I tend to think that the green and loggerhead will be placed on the Federal endangered species list. This may solve our Hawaiian problems as my interpretation of the 1973 Endangered Species Act leads me to believe that an animal on the foreign list may not be legally taken in any of the States. I have requested clarification on this matter from Washington.

As I indicated to Dr. Ehrenfeld, Mariculture officials have stated that their "farm-reared" products must be exempted from importation restrictions if endangered status is obtained or the venture will fail. Also the pending California bill must be passed so that products can be sold in that State. I would greatly appreciate names and addresses of any influential legislators in California to which I can submit testimony on this matter.

While on Cayman I had the opportunity to observe the turtle butchery and market, as well as learn a few things about the fishing off Nicaragua. I found the people to be very friendly and open about their activities, much the opposite of our local Hawaiian fishermen. A Mr. Henry Bush sells the turtle parts in the Georgetown market-place and it was indicated that he regularly sends you tags. I observed three tags during my stay (8975, 9519 and 7240) all taken during the week of January 21 by the vessel "Cayman Pilot." A position of latitude $14^{\circ} 6' N$, longitude $82^{\circ} 38' W$ was given to me by the Captain, however he seemed a little uncertain at the time. Three boats are presently engaging in turtle activities, each making a trip approximately once every four weeks and returning with 80 to 100 greens. Of the animals I observed, about one in eight were males. I would guess all to be sexually mature. Eggs 0.2 to 1.0 cm diameter were seen to be developing in most of the females butchered. Two hawksbill were among the catch (one measured approx. 35 cm straight C. L. and had sold for U. S. \$25). Every so often a loggerhead is taken. During my stay 38 of the larger greens escaped from an in-water enclosure at West Bay (much to my pleasure).

I believe that an interesting and informative article could be written based on a trip taken on one of the Cayman turtle boats. I explored this possibility with one of the captains and found him very receptive. The support for such a ten-day trip would be minimal (probably less than \$2,500) and I would greatly appreciate your opinion on the value of such a documentation before I consider asking an agency for support.

Dr. Archie Carr
Page Three
February 4, 1972

Another point of interest is the fact that farmed turtle does not undersell wild turtle on Cayman Island itself. Choice wild beast steak sells for \$1.50 per lb while the farmed product goes for \$2. A luxury restaurant owner indicated that the wild meat has better flavor and texture and he preferred to serve this item to his customers. No Cayman local that I spoke to preferred the farmed animal. Most objected strongly to eating it.

Possibly you are already aware of much of the information I have presented, however I pass it for whatever it is worth.

With best regards.

Sincerely,

George H. Balazs

mk

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

TRANSLATED

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

October 7, 1974

Lic. Humberto Caballero
Director, Dirección de Recursos Renovables
Comayaguela, HONDURAS
Central America

Estimado Señor:


I am writing you to ask the cooperation of your office in the difficult problem of saving, and perhaps eventually rehabilitating the nesting colony of Lepidochelys olivacea, the olive ridley, on the Pacific coast of Honduras. As the enclosed copy of an old article of mine will show, I have been concerned with this population for many years. Moreover, the doctoral research of my former student, Dr. Peter Pritchard, extensively involved the Honduranian colony. It has seemed evident for years that the exploitation that this species is undergoing in Honduras, which amounts to the taking of virtually every egg laid during the entire nesting season, is completely blocking the reproduction of the Honduranian population. The turtles that now nest there must be only old ones that matured before the current practice of taking one hundred percent of each season's eggs had developed.

I am sure that it will seem logical to you to conclude, as I have, that it is only a matter of a short time before Lepidochelys disappears from the waters of your country. Since sea turtles have a homing tendency and attachment for a natal shore, it may never be possible to reestablish the colony from other sources.

It is for these reasons that I am taking the liberty of asking you to consider the possibility of declaring a complete moratorium on all sale of eggs taken from the beaches of your country. Such a move would not only save the Honduranian ridley colony but would serve as a model for foresighted conservation of the species in the waters of other countries within its geographic range.

As a one-time five-year resident of your beautiful country I felicitate your able efforts to preserve the abundant natural assets of Honduras and sincerely hope that Lepidochelys will not disappear from the picturesque shores of the Gulf of Fonseca.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs
Enclosure
cc: Dr. Jan Peter Johnson

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

October 9, 1974

Ms. Luz P. Castro
Head, Wildlife Management Section
Parks, Range and Wildlife Division
Bureau of Forest Development
Diliman, Quezon City, Philippines

Dear Ms. Castro:

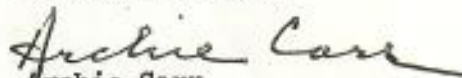
I have recently learned with astonishment and concern that, at a time when conservationists are doing everything possible to slow the alarming decline of world populations of the green turtle, the Philippine Government has issued permits for the taking of 25,000 green turtles in the Sulu Sea. The Philippine population of Chelonia, and the contiguous stocks in Bornean waters are one of the only large assemblages of green turtles left in the world. Although nobody has reliable census data for the whole region, I can on general principles assure you that if the harvest that is permitted in your licenses were to be realized, extirpation of the species from this stronghold could be expected within a decade. The process would take that long only because of the moving in of successive age-groups of new breeders from the current backlog of immature turtles.

To those of us who have dedicated time to the difficult work of saving Chelonia mydas as a resource and a wild species, this move of your government dashes the hope that resided in the important Sulu Sea green turtle colony. I want to urge you to consider what steps might be taken to rescind the permits that have been issued, and to declare a complete moratorium on sea turtle hunting in Philippine waters while working out an effective management plan with appropriate agencies in Sabah and Sarawak.

I sincerely hope that you will urge all officials concerned to give this critical situation their careful consideration.

Separately I am sending you some publications on aspects of sea turtle conservation.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

July 11, 1973

Mr. Anthony Fisher, Director
Mariculture, Ltd.
Newplace Framfield
Sussex, England

Dear Mr. Fisher:

Thank you for your interesting letter of 4 June 1973. I hope you will excuse the delay in my reply, which was written shortly after your letter came and until now held up by an interlude at our turtle station in Costa Rica.

As to the prospect of Mariculture being given active "support" by the species-survival kind of conservationist, I can only repeat the opinion I have expressed to you before--that endorsement by such people could rationally be expected only when it could be clearly shown that Mariculture is improving the survival outlook of wild populations of sea turtles.

As a quondam lover of green turtle soup I would like to see it available in the market. Also, I share your concern over seeing mankind better fed. Moreover, as one who has valued friends in Mariculture, Ltd. I would, other things being equal, rejoice to see it work out its problems and prosper. But as Technical Director of the Caribbean Conservation Corporation and Chairman of the IUCN Marine Turtle Group, and as a chap who has more or less quit eating turtle as a gesture in recognition of its decline, it would be completely irrational of me to come forth in support of your enterprise so long as it (1) takes eggs from sanctuaries and natural nesting grounds and (2) fails to saturate markets, bring down prices, and so, demonstrably to reduce the amount of turtling that goes on in the world.

I should point out that I think the salient aspect of our relationship to date is not that I do not support Mariculture, but rather that I have not actively raised my voice in opposition. Both here and in Costa Rica I am questioned with increasing insistence by people who are puzzled to know what is going on down at Tortuguero--why the hard-won green turtle sanctuary there is being raided for eggs for exportation by a foreign commercial enterprise; and whether the Caribbean Conservation Corporation may not in some hidden way be involved with that enterprise. I anticipate more such questioning when during the coming turtle season we are visited by three trainees who are to be attached to the government turtle programs in the Bahamas, Ecuador, and the Galapagos Islands. The two young Bahamians and an Ecuadorian will spend ten days at our

Mr. Anthony Fisher

Station familiarizing themselves with turtle nesting ecology, with our tagging procedures, and with local turtle legislation and enforcement problems. I have been wondering how to explain to these people our seeming acquiescence in the exportation of turtle eggs from the sanctuary for international commerce.

Despite this spread of puzzlement among onlookers, and my own uneasiness over the egg harvests, I have made no move whatever to stir up San José against your operation. Perhaps I couldn't create serious obstacles if I tried; but the point is, I consider that all of us survival people have actually been leaning over backwards by refraining from generating the disagreeable struggle that our active political and diplomatic intervention would surely involve. To me that attitude practically constitutes "support" for you and is, as I said, becoming somewhat awkward to rationalize.

The most persuasive evidence that Mariculture deserves the support of conservationists would be a realistic prospectus showing (1) projected evolution to complete self-sufficiency with respect to egg needs within a short time; and (2) a predictable production schedule that will saturate markets for turtle products--meat as well as the various by-products of your enterprise--and depress prices to the point that both poaching and legal turtling are made unprofitable. Failure to meet these stipulations automatically makes Mariculture one of various adverse factors in the survival outlook of the green turtle.

So I still see no reason why an individual whose main concern with sea turtles is enhancing the chances of survival of the various wild species and subspecies should be expected to sing the praises of Mariculture, or to do anything other than deplore, and perhaps try to stamp out, international traffic in sea turtle products. That those of us in organized sea turtle conservation have not undertaken any such campaign ought to seem an extraordinary example of temperance and indulgence.

The tagging work that your egging teams have done at Ascension, Surinam and Tortuguero has been an important contribution to the study of green turtle ecology. I am most grateful for the data you have furnished, and sincerely wish I could reciprocate with a strong endorsement of your whole operation. On the other hand, I honestly can't understand why Mariculture should expect to get the backing of species-survival people until it has been clearly shown that you are improving and not degrading the future of wild sea turtle stocks.

With best personal regards,

Archie Carr
Graduate Research Professor

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

December 4, 1973

Mr. Fernando R. Quirós, Economist
Corporación Costarricense de Desarrollo
Apartado 10323
San Jose, Costa Rica

Dear Mr. Quirós:

Thank you for your letter of 14 November, telling of the interest of CODESA in the possibility of establishing in Costa Rica a large-scale turtle-farming project patterned after that of Mariculture, Ltd. of Grand Cayman.

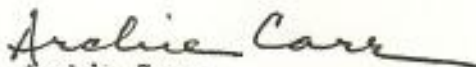
The importance of the green turtle as a potential source of protein for man has always seemed to me to be its essential herbivorousness. Except for the seacows, it is the only edible animal that naturally harvests the vast expanses of underwater pasturage that occur throughout the tropical world. Mariculture, Ltd. shortcircuits this fundamental virtue of *Chelonia*, however, and feeds its turtles a factory product, keeping them in tanks on shore to which sea water is pumped at great cost, and getting its eggs from sanctuaries (Tortuguero, Ascension Island and Surinam). I am told that the Mariculture investment is now around five million dollars, that more is required, and that they are searching for a site for a second plant similar to the first.

As you suggest, Mariculture has had some success in producing fertile eggs from captive turtles, but they are still nowhere near the necessary goal of maintaining enough mature, egg-producing adult turtles to support a viable program of commercial production.

It seems to me that green turtle farming faces imposing obstacles. Certainly, any effective effort of this kind is bound to require large amounts of very patient capital. And because sea-turtles are a diminishing resource that is being increasingly exploited, any venture that introduces them into international commerce is sure to receive the critical attention of conservationists everywhere.

I enclose a copy of a letter of mine that may give you additional background for your pondering of this complex matter. If other questions that you think I might answer occur to you, please let me know.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs
Enclosure
cc: Guillermo Cruz B.

UNIVERSITY OF FLORIDA
GAINESVILLE, 32611

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

December 18, 1973

Mr. Irvin S. Naylor, President
Mariculture, Ltd.
R. D. 9
York, Pennsylvania 17402

Dear Mr. Naylor:

Thank you for your interesting letter giving your views on the potential role of Mariculture, Ltd. in conserving the green-turtle and explaining the developmental problems that Mariculture faces. Your letter makes some telling points in a case that has heretofore been somewhat fuzzily reasoned.

There is no doubt that green turtle farming, grounded on adequate pilot research, holds promise as one recourse in the campaign to save natural sea turtles. I have believed this for 25 years. However, my belief was based on the assumption that prospective culture projects would be non-profit, experimental exercises disciplined to refrain from commercial production until pilot studies had shown the feasibility of rearing young turtles to sizes at which they would in nature have become herbivorous. The two-year olds would then be pastured or pen-fed on marine spermatophyte vegetation. In this way the herbivorousness of the animal--which is the essential element in its potential as a protein source for man--would be exploited. Concurrently with the foregoing, pen-reared breeding stock would be developed, both to furnish all eggs needed to sustain a viable industry, and as material for the selection of an improved farm animal distinct from all wild stocks. While this technology was being worked out a realistic marketing prospectus would determine whether the profit necessary to keep the industry alive could be made without either expanding existing markets that could not be flooded, or creating new ones. It has seemed to me from the outset that the most crucial proof of the effectiveness of a farm in promoting green turtle survival would be its motivation and ability to lower the prices paid to poachers and legal hunters for turtles taken in the wild.

Those were my ideas about turtle farming back in the days when we were providing hatchlings for the Schroeders' Islamorada project, which was ancestral to your present enterprise. Your files will show that

Mr. Irvin S. Naylor
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December 18, 1973

Mariculture grew out of the meeting between the Schroeders and Mr. Anthony Fisher. Thus, my thoughts about the relation of turtle farming to wild-species survival have been continuously known to your administration since Schroeder, at my suggestion, was first approached by Mr. Fisher.

I am reminding you of this because of my surprise at the suggestion in your present letter that I urge a California legislative committee to withdraw legislation prohibiting the importation of green turtle products. In effect, the request is that I support your effort to establish new markets for turtle products in the relatively virgin territory of California. I am sure that a man able to compose as forceful and articulate a letter as yours must see the lack of logic in that request.

Up to now my only knowledge of the California situation has been a request for my opinion on the turtle legislation sent by Mr. Roderic Tuttle on September 12. I was on the verge of leaving for Australia at the time and my reply was somewhat perfunctory, consisting essentially of a copy of a letter I had written Mr. Fisher, who had inquired why I had not supported the work of Mariculture. If you have not read that letter, I hope you will do so. Since it was written the only change I find in the situation is that 12,000 eggs have now been produced in your breeding pens, by turtles of varying origins, histories and periods of captivity. This is a solid achievement, although not, as you know, a final solution to your egg-production problems. Meanwhile, like good businessmen, you have gone steadily ahead with the improving, diversifying and advertising of your turtle by-products. Developing markets for by-products is sound business practice, but your innovations in that line are sure to generate increased pressure on natural turtles throughout their range. You point out that you have not stimulated a rise in the price of green turtle soup. This is really irrelevant, because I hear that your non-edible products--oil, leather, tortoiseshell, decorative whole shells, mounted turtles and the like--now bring you more profit than the meat and calipee you sell. Moreover, your production of remarkably good "tortoiseshell" from captive green turtles has exacerbated the problem of protecting another species, the hawksbill.

So during the past five years, while watching the amazing progress of Mariculture, Ltd., I have found it increasingly hard to ignore the evidence that sea-turtle conservationists really ought to be doing everything possible to discourage international commerce in sea turtle products.

Mr. Irvin S. Naylor
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December 18, 1973

I have not done that. Instead, as I pointed out to Mr. Fisher in the letter referred to, I have, perhaps to a reprehensible degree, refrained from any effort to mount such a campaign. I am a zoologist and not an activist, and I dislike confrontation between objective scholarship and vested enterprise. I am somewhat surprised that Mariculture has not seemed to take due comfort out of my relative quiescence, amounting by now almost to acquiescence, and that of some of my colleagues in the world species-survival fraternity.

I sincerely regret the difference of views between us. If I could see solid evidence that your organization is making it a prime procedural requisite to avoid any move that could hinder stewardship of wild sea turtles, I would be delighted. You-all have accomplished an organizational *tour de force* at Grand Cayman. I wish I could take advantage of the research opportunities that your enterprise could provide. I believe, however, that if you will take another look at a recent advertising leaflet of yours urging people to hang your prepared green turtle shells on their walls you will see why Mariculture's expanding program makes me uneasy, and will perhaps agree that I would be dull-witted to encourage California to help the spread of a disastrous vogue by opening its borders to the importation of green turtle products.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC:dg

December 12, 1973

Dr. Archie Carr
Graduate Research Professor
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

Today I received your letter of December 4 which, after checking my files, I find to be the same date of my last correspondence to you. Hopefully you will have the opportunity in the near future to give advice on some of the points mentioned in that letter.

I also believe that a complete moratorium on the taking of turtles in Hawaiian waters is justified at this time, however both cultural and political factors would make this, in my opinion, next to impossible to achieve.

Small groups of lower income people on nearly every island are known to depend from time to time on turtle for at least a portion of their meat. During a recent public hearing the spokesman for a Hawaiian group from Molokai supported the regulation intact and felt that it should be strongly enforced for all residents of the State - except people on Molokai! His reasoning was that the people of his island practiced a type of conservation that ensured a supply in the sea when necessary. After the meeting he agreed with me when I pointed out that very little conservation awareness has been exhibited at other locations in the State and that the "take all you can, while you can" attitude displayed by fishermen selling to tourist restaurants was destroying the population for all of us.

I am aware of the fact that initial turtle regulations put into effect in both Tonga and Fiji gave protection to animals larger than 36 inches, however I was informed several months ago that changes had been made to protect animals less than 36 inches. I am in agreement with the biological reasoning of protecting the breeders but tend to feel that such a restriction would give less overall protection under our Hawaiian conditions.

Dr. Archie Carr
Page Two
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By far, most of the animals sighted and being taken are under 36 inches. The mean weights of the "reported" animals (and we now know that fewer than 20% are reported) have ranged from 150 to 107 lbs over the past four years. Large (breeder) turtles are not often seen, are more difficult to capture and are considered less palatable by some individuals. It would seem desirable to allow sub-adults the opportunity to reach reproductive size and breed at least once or twice before being subjected to hunting. If smaller animals were made legal, far greater numbers would be removed from the population due to their greater availability. I suppose that a case can be made for both viewpoints. The important factor is that commercial taking of all sizes must be eliminated in Hawaii. The personal gain incentive appears at this time to be the major factor of our turtle exploitation and it will surely continue to increase if left unchecked.

You may be interested to learn that the proposed regulation only prohibits the selling of green turtle taken from Hawaiian waters. Attempts were made to prohibit the selling of both imported and locally taken turtles, however the State Attorney General advised against this, indicating it might be unconstitutional. California does have such a law but I do not know if it is enforced.

Thank you for taking the time to confer with me on this matter.

Sincerely,

George H. Balazs (M.S.)

mk

December 5, 1973

Dr. Archie Carr
Graduate Research Professor
College of Arts and Sciences
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

You may be interested to learn of the progress that is being made in obtaining protection for sea turtles around the eight major Hawaiian Islands. On September 21st a public hearing was held in Honolulu on proposed regulation 36 and public response was greatly in favor of this measure. After subsequent approval by the Governor's Animal Species Advisory Commission, the proposed regulation came before the Board of Land and Natural Resources where the chairman, Mr. Sunao Kido, quite unexpectedly refused to act until additional public hearings were held. To use his own words, "However meritorious the issue, we shouldn't rush into it." This move required that legal notices be reissued in the newspapers along with the mandatory waiting periods. Hearings will now be held on the Islands of Kauai and Maui on the evening of December 5th and on Hawaii on the 6th, after which the measure will again go before the Land Board.

I am very optimistic about the passage of this regulation. Public interest and concern has been steadily increasing and I am happy to say that a new "sea turtle awareness" has developed throughout the State. The credit for a large portion of this public arousal must be given to several fine science writers on the staff of our local newspapers.

You will note that a section 2c has been added to the proposed regulation which allows for the possession and sale of eggs or progeny of captive green sea turtles.

State funds (\$50,000) have apparently been committed to an organization (Pryor Corp.) here in Hawaii for the pilot development of a green turtle and oyster farm. This is supposed to be

Dr. Archie Carr.
December 5, 1973

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an attempt to provide new industry to the North Kohala section of the Island of Hawaii where sugar has recently gone out of business. The section of their project proposal dealing with turtles points to the "successes" of Mariculture, Ltd. as an example of what can be accomplished. It has not been revealed where eggs or hatchlings will be obtained, however I know that they will not come from the Hawaiian Islands National Wildlife Refuge. I imagine they will be brought in from other nesting areas far removed from Hawaii. I seriously question the wisdom of such an introduction. Section 2c was included in the proposed regulation due to pressures from these prospective sea turtle farmers, however the placement of the word "progeny" rather than merely "allow the selling of farm reared turtles" was included at my urging. I do not know if the wording will remain intact in view of the pressures that will undoubtedly develop for the use of hatchlings from natural nesting beaches. Any assistance that you can give me will be greatly appreciated.

In the event that you have not already seen the leaflet "New hope for the green sea turtle," I have enclosed a reproduction. This was sent to me by the Bank of Virginia Company which assumed I had not heard of Mariculture, Ltd. The underlines in the text of this advertisement/publication were for my own purposes. I have found much of the information to be very glossy and cannot accept a great deal of what is stated, at least based on my own studies and review of the literature to date.

Best wishes for the holiday season.

Sincerely,

George H. Balazs

GHB:md

Encls.

Balazs

March 29, 1973

Dr. Archie Carr
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

Thank you for your letter of January 18, dealing with the marine turtle situation in Hawaii. My efforts to obtain protection for our turtles continues and at present regulations are under consideration by the Department of Land and Natural Resources. In addition, a House Bill (1635) is before the legislature which requests research funds for a 3-year intensive study on all aspects of Hawaii's turtle population. Although the State's financial picture is not presently all that promising, the bill has received surprising support thus far.

Our nutrition studies on the green hatchlings which were transported from French Frigate Shoals have proved valuable for the evaluation of experimental diets. These animals are now 6-months old and are kept in 10' diameter flow through sea water tanks. Since Hawaii's turtles are apparently the only sea turtles which still bask, I was interested in determining if our young turtles would haul out. Cement blocks were stacked up in the tank so that they rose several inches above the surface, with one side sloping gently into the water. Each day since this has been set up numerous animals pull themselves out and bask for extended periods. It is not unusual to see turtles crowded one on top of another on these blocks. My observations tend to confirm that the animals are particularly attracted to sunlight. More animals are found on blocks which are in direct sunlight than those located in shaded areas. I would very much be interested in knowing if you are aware of any observations of this nature having been made in other areas of the world. I have been unable to find any references relating to this behavior in young marine turtles and am contemplating writing the observation into the form of a technical note.

Any assistance you are able to give me will be greatly appreciated.

Sincerely,

George H. Balazs

mk

February 22, 1974

Dr. Archie Carr
Graduate Research Professor
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

Thank you for the copy of your February 19 letter to Mr. Naylor with accompanying list of recipients of your previous correspondence. You may be interested to learn that while on Grand Cayman Mr. Naylor's letter to you dated December 7, 1973, was made available for my inspection. Although very eloquent, I felt that the entire content (and "plea" if you will) was motivated from an economic viewpoint and, in effect, presented a very weak case for his position. I indicated to the farm manager, Mr. Goddier, that I would like to have the opportunity to distribute Mr. Naylor's letter to associates along with copies of the correspondence you had sent. Mr. Naylor was immediately contacted in the States for approval. He agreed, but only with the stipulation that I supply him with a list of those persons that receive copies. I flatly refused this offer, whereby he then gave written permission for me to use the letter with no strings attached.

I have enclosed a copy of my correspondence to California Assemblyman Edwin Ziberg. In addition, some months ago our Hawaii State Fish and Game Director asked me to comment on a letter from John Hendrickson. I have enclosed copies for your reference.

Unfortunately, it is no longer possible to completely separate politics and science in a research career. A small portion of each of our daily activities must be biopolitically oriented if the general public and policy makers are to be made aware of the facts. Best wishes.

Sincerely,

George H. Balazs

mk

Enclosure

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

February 19, 1974

Mr. Irvin S. Naylor, President
Mariculture, Ltd.
R. D. 9
York, Pennsylvania 17402

Dear Mr. Naylor:

In reply to your request of 6 February, I'll be glad to try to list the people who were sent copies of my earlier letter to you. During the period when Mariculture and its adversaries were involved in the California legal controversy, a great many people, besides yourself, telephoned or wrote to ask my opinion on the issue. It was only in your case that I addressed a carefully worded statement of my position. As the California hassle continued, I sent copies of that letter in answer to all inquiries. Additional copies went to some members of the Board of Directors of the Caribbean Conservation Corporation (so marked on the list) and to various associates on the Survival Service Commission.

I shall look forward to your reply to the letter involved with interest. You may be sure that if it presents clear new evidence that Mariculture can realistically be regarded as a favorable factor in the world outlook for Chelonia, I'll readdress myself to the people on the list with an enthusiastic endorsement of your enterprise.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fa

Enclosure: List of recipients of Carr letter to Naylor, Dec. 18, 1973
cc: Persons listed on enclosure

Mr. Colin Phipps CCC
P. O. Box 3547
Tallahassee, Florida 32303

Mr. John H. Phipps CCC
P. O. Box 3547
Tallahassee, Florida 32303

Mr. Joshua B. Powers CCC
163 E. 81st Street
New York, New York 10028

Dr. James A. Oliver CCC
Director, New York Aquarium
Seaside Park - Coney Island
Brooklyn, New York 11224

Dr. Wayne King CCC
New York Zoological Society
The Zoological Park
185th Street and Southern Blvd.
Bronx, N. Y. 10460

Sir Peter M. Scott, Chairman
Survival Service Commission
Slimbridge
Glos. England

Mr. A. Mence, Executive Officer
SSC, IUCN Secretariat
1110 Morges
Switzerland

Dr. Peter C.H. Pritchard
Florida Audubon Society
P. O. Drawer 7
Maitland, Fl 32751

Prof. John R. Hendrickson
Department of Biological Sciences
University of Arizona
Tucson, Arizona 85721

Dr. Harold F. Hirth
Department of Biology
University of Utah
Salt Lake City, Utah 84112

Prof. Tom Harrison
Mass Observation Archives
University Library
University of Sussex
Falmer, Brighton
BN19QQ ENGLAND

Mr. Tony Butler
Department of the Special
Minister of State
Canberra A.C.T. 2600
AUSTRALIA

Dr. H. Clay Frick
Alpine
New Jersey 07620

Mr. + Mrs. R. S. Fitter
The Fauna Preservation Society
c/o The Zoological Society of London
Regent's Park, NW 1, London
ENGLAND

Dr. George H. Balazs
Hawaii Institute of Marine Biology
P.O. Box 1346, Coconut Island
Kaneohe, Hawaii 96744

Dr. David W. Ehrenfeld
Dept. of Biology
Barnard College
New York, N. Y. 10027

Dr. Howard Campbell
Office of Endangered Species
Department of the Interior
Bureau of Sport Fisheries and Wildlife
Washington, D. C. 20240

Mr. Frank Lund
P. O. Box 541
Jupiter, Fl 33458

Sr. Guillermo Cruz B. CCC
Apartado 2259
San José, Costa Rica

Mr. G. R. Hughes
University of Natal
Durban, NATAL
So. Africa

Ms. Virginia Handley
The Fund for Animals
P. O. Box 2354
San Francisco, California 94126

Mr. Bill Collins, Jr.
North California Wildlife Committee
2933 Yorba St.
San Francisco, California 94116

PAGE 2

Mr. L. P. Smart, F.C.A
Marquand and Company
51 Queen Street
Melbourne 3000
AUSTRALIA

Prof. Bert Main
Department of Zoology
University of W. Australia
Perth, AUSTRALIA

Mr. Nigel Sitwell
The World Wildlife Fund
29 Greville Street
London EC1N 8AX ENGLAND

Mr. Joe Browder
Environmental Policy Center
324 C Street SE
Washington, D.C. 20003

Dr. Hugh L. Popenoe
International Programs
2001 McCarty Hall
University of Florida
Gainesville, Florida 32611

December 7, 1973

Dr. Archie F. Carr
Department of Zoology
University of Florida
Gainesville, Florida 32601

Dear Dr. Carr:

I have decided to write this personal letter to you in an attempt to cut through what, for me, is a confusing situation. I want and need to do what I can to establish a clear line of communication with you regarding sea turtle conservation and the policies and plans of Mariculture, Ltd. From all I have heard about you, it would appear that you are also the sort of person who would favor clear delineation of problems and open, objective discussion of possible solutions. From your obvious dedication to the field of marine turtle conservation, I am encouraged to believe that this letter may receive an early response from you, busy as I know you are. On my part, I can assure you of deep and honest interest in whatever you may say, and of a sincere desire to work with you.

I regret that this, my first personal approach to you, should be under circumstances which allow questions of personal gain to bias what could be a mutually rewarding association in terms of ideas and points of view, and could - I am convinced - be of lasting benefit to the animal species which is of paramount concern to us both. It is true that the histories of our common interest in the green sea turtle are not identical, but from separate directions, I believe that we both wish to work toward the same end - its immediate protection in the wild and its ultimate survival as a stable and unendangered population complex.

Mariculture, Ltd. is a commercial operation; it must be candidly stated that, like all commercial operations, Mariculture has as a business consideration the goal of profit-making. However, the days of mindless exploitation of any and all resources is long past. If nothing else, world social consciousness has evolved to the point where moral pressure is brought to bear upon rapacious exploiters, like it or not, and, were I one such, considerations of business survival alone would compel me to be mindful of world opinion and social judgment. In all honesty, I assert the truth to be far removed from this hypothesis. I am

Page 2
December 7, 1973
Dr. Archie F. Carr

a pragmatic business man. I do engage in business for profit, but I am also a responsible member of this modern, conservation-conscious world community. It is my belief that these are not mutually exclusive claims, and that I am in a position to work effectively toward your own goal of preserving and strengthening the marine turtle populations of the world. I believe I could contribute from a different direction than heretofore attempted, but a direction which in the end may also prove particularly efficacious because of its practicality. Our company's physical plant lends itself to use as a laboratory for purposes which would be nearly or quite impossible to fulfill in the boundary-less ocean expanses. The pen facilities are available for physiological, behavioural and biochemical studies by interested scientists. Such studies by outside scientific personnel are now going on. The continuity of our stock through time is an asset which cannot be approached in the wild state. We are, as you undoubtedly know, supporting substantial completely non-commercial, purely conservation-directed activities, relating to sea turtles; we plan to support more in the future.

I have the feeling that you may take no exception to any of the above, and that this letter might therefore appear to you to be unnecessarily defensive. If so, I ask your forbearance, and would point out only that the need for self-justification is often felt in proportion to the extent to which one feels embattled!

My purpose in writing to you at this particular time is to present my case for the survival of Mariculture, Ltd. We have been advised that a piece of important, emergency legislation in California, which we deem critical to the continuance of our company, has little or no chance of being enacted because of the belief by several legislators that you stand in firm opposition to our operation. I had always thought you stood apart from our goals of turtle farming, resisting any semblance of active support for the idea but not speaking in opposition. As unhappy as I was to not have your enthusiastic support, I understood and honored such a position. As I saw it, it was up to us to "convert" you, if we could, by a record of good results and positive conservation actions. But several California legislators allegedly believe otherwise, and they are apparently able to muster sufficient opposition to defeat the emergency measure which is required to sustain our markets in California, presumably based solely upon the belief that you want this done. The California Fish and Game Commission, the Chairman of the Assembly Natural Resources Committee, and other active bodies in California apparently take a careful, favorable view of the emergency bill, but its failure is predicted so long as you purportedly oppose it.

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Dr. Archie F. Carr

Failure of the bill, shutting off our market in California until 1975 (when a "normal" bill permitting our exports to California is almost certain to pass easily), would materially cripple our young company at this stage of its development. We are still struggling through normal growth problems; these unfortunate financial times rule out the promise of abundant new investment funds to keep the machine running; and every dollar of cash flow at the present stage is essential. We do not feel we could survive a 30% cut in our embryonic market, and that is what is at stake now in California. If the battle is to be lost now, it should at least not happen because of lack of awareness, or because of misunderstanding.

In the belief that I understand your position, and with the assurance that your possible points of objection in principle to commercial sea turtle farming should be given full and deep consideration between us, I ask if it would be possible for you to write a short note to Assemblyman Edwin L. E'berg, Chairman, Assembly Committee on Natural Resources and Conservation, State Capitol, Sacramento, California, 95814 re-stating your position and to do so as soon as possible, but not later than December 26. The critical point would be that, while you do not yet unqualifiedly support Mariculture, you do not oppose us (assuming, of course, this is the case).

The enclosed text of the draft bill in question (No. 1502) and its proposed amendments will hopefully serve better than many paragraphs of mine to delineate some of the issues. I should point out that Mariculture accepts the implied principles of the bill actively - not passively. We subscribe to the idea that our farm must with all possible speed become totally independent of wild turtle stocks (indeed, this spring we produced over 12,000 eggs from our breeding fleet!); we only need time to complete our rapid development along these lines. We acknowledge the necessity to avoid all possible negative effects on survivorship in the wild populations, and to base our remaining few years' need for "seed" upon that critical difference between fecundity and fertility rates which is imposed by these natural phenomena available for human manipulation. We want to learn to better identify naturally "doomed" nests and confine our hatching material to this category; we want to reduce natural predation rates to earn our needed seed material, where this can be done without adverse effect. We want to do all things adjudged scientifically suitable to keep our temporary needs for wild material from hurting the wild populations. We do most actively want to continue to acquire (and deserve) accolades for being a positive force in sea turtle conservation.

Page 4
December 7, 1973
Dr. Archie F. Carr

To us, the exciting goal is the creation of a new domestic animal, the production of human food from a new resource base on a self-sustaining, non-wasting schedule. This last implies to us a future of moving to ever-cheaper unit prices and of production levels to meet demand at those lower prices. We admittedly have far to go, but the dream is quite real to us. Along the way, we feel certain that we can do more good for wild turtle populations through increased knowledge from research than we do harm by popularizing turtle soup. In the end, we would hope to have made it cheaper to farm turtles whose products could be legally merchandised than to poach them and attempt to sell their products in violation of the new, meaningful international endangered species legislation. I do not minimize the problems or the risks; but I do not forswear the idealism either!

Any consideration you give this letter would be most deeply appreciated. I would be particularly pleased to talk with you on the telephone, if you care to call me collect at 717/757-1500.

Yours very truly,

MARICULTURE, LTD.

Irvin S. Naylor

cc: Dr. Hendrickson, M. Fisher, K. Norman, M. Goodier

Enc: Draft Bill 1502

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

February 18, 1974

Dr. George H. Balazs
Hawaii Institute of Marine Biology
P.O. Box 1346, Coconut Island
Kaneohe, Hawaii 96744

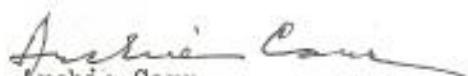
Dear Dr. Balazs:

Many thanks for your three recent letters. I'm glad you enjoyed your stay on Grand Cayman. As you say, the people there are mostly very pleasant.

Many thanks also for the information on our tags No's 8975, 9519 and 7240. Since the beginning of our Tortuguero project in 1954 the Cayman boats have been our best single source of tag returns. Now that the Nicaraguans have kicked out most foreign turtle boats it is the Miskito Indians who catch the Miskito Bank turtles, and it is mainly they who send in the tags.

I hope that Mariculture's proliferation scheme in Hawaii fizzles out. If the new proposed Federal legislation goes through I think they will find it hard just to stay alive on Grand Cayman.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

December 4, 1973

Dr. George H. Balazs
Marine Biologist
University of Hawaii at Manoa
P.O. Box 1346 - Coconut Island
Kaneohe, Hawaii 96744

Dear Dr. Balazs:

I regret the delay in my reply to your letter concerning the Hawaiian turtle legislation, which arrived when I was in Australia.

This is an advance, although I am sorry Hawaii is unable to declare a moratorium on all turtling until a management program with some promise of stability could be worked out. Actually, as scarce as turtles appear to be in the islands they ought to get complete protection. Perhaps this is simply not politically practicable, as is, I am ashamed to say, the case in Florida. I would add, however, that a law restricting the taking of big turtles is likely to be better than one protecting only little ones. The demographically important turtles are the big breeders that have run the predation gauntlet and are furnishing new turtles for the population. Protecting little turtles is commendable, but really it comforts people more than it helps the species involved.

Nevertheless, you certainly deserve strong personal congratulations for what has been accomplished in Hawaii.

Sincerely yours,

Archie Carr
Archie Carr
Graduate Research Professor

AC/fs

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

January 18, 1973

Mr. George Balazs
Animal Nutritionist
Hawaii Institute of Marine Biology
P. O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear Mr. Balazs:

Many thanks for your letter of January 15, with the material on marine turtles in the Hawaiian Islands and your proposals for protecting them. In general the amended version of the proposed legislation seems good. Personally, I would prefer to see a complete moratorium on the taking of all sea turtles throughout the Hawaiian Islands until a careful survey of breeding, feeding and basking populations could be made. This no doubt entered your deliberations, however, so I judge the proposed regulations are simply the strongest you and Dr. Radovsky believe you can swing at present. In any case your proposal would clearly bring a great improvement over the present situation.

To an outsider like myself, the most conspicuous aspects of the Hawaiian sea turtle situation are the dramatic gaps in present nesting distribution, and the decline the species must have undergone there during the past century. I believe that you failed to mention anywhere that the hawksbill, which by the way is mainly carnivorous in most of its range, is classed as an endangered species by the Survival Service Commission of the IUCN.

I am very glad to see this awakening of interest in Hawaiian sea turtles and hope you will be given the support you need.

Sincerely yours,



Archie Carr
Graduate Research Professor

AC;es

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

December 20, 1973


Dr. George H. Balazs
Hawaii Institute of Marine Biology
P.O. Box 1346, Coconut Island
Kaneohe, Hawaii 96744

Dear Dr. Balazs:

Many thanks for your letter. It's easy for an outsider to be visionary, but I can certainly sympathize with you over the difficulty of imposing a complete turtle fishing moratorium there. I still think you need one though.

Anyway, keep up the good work.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

January 8, 1973

Dr. George H. Balazs
Hawaii Institute of Marine Biology
P. O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear Dr. Balazs:

I regret that I will be out at Ascension Island at the time of your proposed visit. In any case, however, I am not involved in the experimental rearing of sea turtles, and would have little information to share with you. Mariculture, Ltd. of Grand Cayman is now the ranking repository of such data, and some smaller advances have apparently been made by Dr. David Ehrenfeld, Department of Biology, Barnard College, New York 10027; Dr. Robert Shoop, Institute of Environmental Biology, University of Rhode Island, Kingston, Rhode Island 02881 and Dr. Nicholas Mrosovsky, Ramsay Wright Zoological Lab, 25 Harbord Street, Toronto 5, Ontario, Canada.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC;es

UNIVERSITY OF FLORIDA
GAINESVILLE, 32603

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

April 7, 1967

Saturday Review, Inc.
380 Madison Avenue
New York, New York 10017

Gentlemen:

Two weeks ago I read your issue of March 11 with more enjoyment than any magazine had given me in a long time. Today I opened your April 8 issue and saw the Olin advertisement with the picture of the forest and the heading, "If You Think This Is Beautiful Wait Till We Chop It All Down." I looked for a humorous twist to the eye-catching statement; but the Olin people were not joking. The advertisement is a grotesque effort to sell the idea that tree farms are not just necessary disruptions of natural landscape, like corn fields and parking lots, but are a substitute for forest, and actually superior to the original thing. Not merely superior in producing pulpwood. Biologically and aesthetically superior. More perfect, more beautiful, more eternal, one gathers.

I can't make out whether the ad is a cynical attempt to brainwash the public, or is just honest ignorance of an unbelievably puerile sort. But in either case the main blame lies not with the exploiter straining for self justification, but with Saturday Review for selling space to purveyors of irresponsible deception. I am writing to tell you how disappointed I am to see this strange breakdown in the judgement of a magazine I have admired.

Obviously your science editor never read the Olin ad. But it is not just principles of ecology and wildlife management that are violated in it. Olin is evidently out to wreck one of the humanities: the intelligent appreciation of original, naturally organized nature. For a magazine dedicated to the humanities, Saturday Review's connivance in the messy campaign is a sorry thing to see.

Sincerely yours,


Archie Carr

AC:es

If you think it's beautiful now,

Wait until we cut it down!

Saturday Review

BEHIND THE LINES—HANOI

April 8, 1967 35¢

IS THERE A WAY OUT OF THE VIETNAM WAR?

By Harrison Salisbury

Playwright Harold Pinter talks about "The Homecoming" (see Theater)



UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

January 4, 1974


Dr. George H. Balazs
Hawaii Institute of Marine Biology
P.O. Box 1346, Coconut Island
Kaneohe, Hawaii 96744

Dear Dr. Balazs:

Many thanks for the copy of your wife's excellent letter to Saturday Review/World regarding its sickeningly uncritical acceptance of dangerous nonsense.

Just as a coincidental curiosity, I enclose a copy of an old letter of mine complaining of their dimwitted outlook. I'm afraid it's chronic. I wish your wife would write an article about Saturday Review.

Sincerely yours,


Archie Carr
Graduate Research Professor

AC/fs
Enclosure



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

1 March 1974

Mr. George Balazs
University of Hawaii at Manoa
P.O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear George,

Thanks very much for yours of the 22nd. Although Carl Hodge, the Director of our Environmental Research Laboratory, was (perhaps still is?) a director of Oceanic Foundation and thereby clearly knows Tap Pryor well, I have no accurate knowledge of Tap's actual involvement in Environmental Research Laboratory business. Perhaps the involvement is only at the level of two friends being interested in each other's affairs. The big news to me is that Tap's project on the big island is funded by the state! I didn't pick up that aspect before. Insofar as Tap Pryor is concerned, I observe with mild interest but no particular attempt to weigh the news in terms of practical import - I wait for the concrete to be poured, the animals to be marketed, or the results to be published (!).


Presumably the big battle over Mariculture, Ltd. and the endangered species legislation continues to build towards some sort of climax. I understand that Sir Alan Parkes is preparing a response to the Ehrenfeld article; this should have some interest for all of us.

On the home front here, there is nothing very remarkable to report. Harold Hirth and I occasionally discuss over the telephone the possibility of arranging a world turtle meeting in this country or Mexico (or even Grand Cayman) if IUCN doesn't pull out the plug and get busy fairly soon. Dave Owens is able to detect specific activity in neurohypophysial extracts from the Green sea turtle diluted one to almost a million! An undergraduate student carrying on a special problem believes he can demonstrate weight increases in satiation-fed turtles which are almost twice as great in fifteen parts per thousand sea water as in either fresh water or full sea water.

I shall enclose a general circulation letter about my own turtle bibliography file, which I hope will be self explanatory. If you have any particular comments, I would value these.

With all best regards,

Yours sincerely,


J. R. Hendrickson
Enc.
mo



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

5 January 1973

Mr. George Balazs
Coconut Island
P. O. Box 1067
Kāneohe., Hawaii 96774

Dear Mr. Balazs,

Enclosed are the xeroxes of the two references you requested. (No charge, am pleased to help out.)

I hear through the grapevine that you are an animal nutritionist and are now directing your efforts toward nutritional studies of sea turtles, among other animals. Sea turtle culture being one of my own prime interests, I would be most interested in learning a bit more about what sorts of work you are doing and the scope of your facilities and plans. One of my present Ph.D. students, Mr. James Wood, is working on essential amino acids in sea turtle diets; could be that there would be interest and value for both of you in establishing contact. Could you find time to write either Jim or me, giving some idea of what you are doing? I shall suggest to Jim that he write you as soon as possible when he returns from a trip to Mariculture, Ltd. in the Caribbean.

With best regards,

Yours sincerely,


J. R. Hendrickson

cc: Jim Wood
mo



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

15 February 1973

Dr. Albert A. Benedict
Chairman, Microbiology Dept.
207 PBRC
University of Hawaii
Honolulu, Hawaii 96822

Dear Al,

George Balazs passed through here the other day and I understand that you may still be deep in sea turtle work. Wonderful! By now, you must be quite an expert on sea turtle immunology.

A Ph.D. student of mine, Mr. David Owens, is planning a program of studies on reproductive biology of sea turtles, based heavily on the large captive stocks at the turtle farm run by Mariculture, Ltd. on Grand Cayman Island in the Caribbean. One aspect of his work will be experiments in hormone forcing by injections of pituitary substances. We are concerned about monitoring and interpreting immunological effects of the injections, which explains why I am writing this special letter to you. Would it be all right with you if Mr. Owens corresponds with you, inquiring as to the possibility of getting your advice on this aspect of his projected work -- possibly your assistance if the idea appeals to you?

George writes that you might want some turtles. It so happens that very soon we must dispose of some when we disband some experiments which have been going on at our marine station in Mexico. Can't release them, since they are Caribbean, South African, Australian, etc. stocks -- almost everything except native Mexican. If you would like some shipped to you, let me know within the next month; we'll be happy to send them. We have only two big ones; maybe three at around 40 lbs.; more at around 10-20 pounds, and quite a few small ones ranging from a few ounces to maybe 3 pounds.

All best regards. I shall hope to hear from you (my telephone number here is 602-884-1889 or 602-884-1376).

Sincerely,

J. R. Hendrickson

c.c. Dave Owens
George Balazs

mo



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

15 February 1973

George Balazs
University of Hawaii
Hawaii Institute of Marine Biology
Coconut Island P.O. Box 1346
Kaneohe, Hawaii 96744

Dear George,

Thanks very much for the articles on capsulation and antibodies a la Benedict. Have written to Al (copy enclosed). If your sensory physiologist friend will write or call with adress and any other shipping advice, I will ask the boys to mail him some babies at the next opportunity.

Please give Gene Kridler my best regards when next you talk with him, and say we are toying with ideas concerning application for permission to do some work in the leeward areas under his jurisdiction. When we can begin some sort of definite proposing, I will telephone or write him.

Also there is a possibility that we may all pass through Honolulu next January, en route to a big-get-together in Fiji. If so, I would like to plan a day or two in Honolulu to pester you guys.

We really enjoyed your brief visit!

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'John'.

J. R. Hendrickson



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

27 February 1973

George H. Balazs
University of Hawaii
Hawaii Institute of Marine Biology
Coconut Island, P.O. Box 1067
Kaneohe, Hawaii 96744

Dear George,

Thanks so much for the letter of February 22nd. with the news of turtle affairs. Thank you for stating our possible interest in breeding studies; it is very good to pass this word out in that fashion.

I am aware of Gene Kridler's concern over Monk Seal disturbance, and we must always keep in mind the fact that we can't prove we are not disadvan- tagging them in some way. However, all experience with other large animals in all other parts of the world would seem to indicate that exposure - without-trauma, provided it is in short doses, tends to make the animals more tolerant. This is most emphatically the case with the large reptiles, with almost all birds, with many African plains animals, and with the California sea lion. My personal belief is that approximately the same conditions hold with sea turtle tagging procedures except that in this case there is physical trauma involved as well (more from turning them than from the tag piercing, I believe), and that therefore one should work at reducing the total time the animal is turned or handled. Massive results from tagging programs in Costa Rica and Australia, coupled with later history on the Sarawak population of Green Turtles, now seems to indicate that Harrisson's suspicion of tagging causing desertion of beaches in Sarawak was unfounded and that those animals were simply being killed off, not deserting.

Yes, it is a fact about the Green turtle bite (I can imagine the relish with which Gene tells that story!!). I was not only bitten, but in a very vulnerable area!

Many thanks and all the best.

Yours sincerely,


J. R. Hendrickson

mo



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

18 May 1973

Mr. George H. Balazs
University of Hawaii at Manoa
P.O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear George,

Thanks very much for your letter of May 10th with the enclosed copy of the proposal for work at French Frigate Shoals. If I understand correctly, this has already been accepted, and I am very glad. Were it not for the fact that Dave Owens has already firmed up plans for the summer on reproductive behavior studies at Grand Cayman Island, I might now be pestering you and Gene for an opportunity for him to participate! If things work out that way, I would like very much to seek some sort of mutually acceptable joint project for next year.

One assumes you will be in the field with Gene, and I want to warn you in advance about those Polish pickles and sausage and his corny jokes! (You can quote me).

I will be visiting Grand Cayman myself in early June for a special sort of turtle conference, then to the Tamaulipas coast of Mexico for an inspection visit to the Lepidochelys kempi nesting beaches. After that, I intend to withdraw from the world to build a mountain cabin and make a trip to visit my daughter in Georgia. I will reappear here in mid-August, ready for work again. This will be my first real vacation in about 18 years.

To the best of my knowledge, there will be no IUCN turtle meeting this year. All the various arrangements seem to have fallen through and the entire system seems to be somewhat disorganized just now. Pritchard fears he will be out of a job as coordinator very soon. Something will re-form, but I don't at this stage know what shape it will take.

George, will you please do what you can to have your crew make systematic records of any and all mating activity observed during your stay on the islands? We need every scrap of information we can get. Particularly, number of males in attendance of a copulating pair, any relationships between copulation date and the female's nesting date, time of day of copulations, duration, etc.

All the best, lots of luck, and fond regards to Gene.

J. R. Hendrickson



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

27 September 1973

George Balazs
University of Hawaii at Manoa
Hawaii Institute of Marine Biology
P.O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear George,

Please excuse this delayed reply to your interesting letter of August 7th. While I have heard of all sorts of plagues and epidemics in captive baby sea turtles, and in a few cases, the causative agents have been identified, I have not before heard of positive identification of Mycobacterium avium as an identified causative agent. Both of your postulated relationships (chickens housed in the same facility in Honolulu; the hosts of sea birds on the French Frigate Shoals breeding beach) seem plausible. I would encourage you to get in touch with Mr. Michael R. Goodier, Farm Director of Mariculture about this. Several microbiologists are working with Mariculture on the subject of turtle diseases, and this might provide useful professional contact for you. I have met two of these men myself - Mr. G. Rebell of the Microbiology Department of Mt. Sinai Hospital in Miami Beach, Florida and Dr. H. Haines of the University of Miami School of Medicine. My impression is that Dr. Haines has concerned himself more with viruses and Mr. Rebell may be more interested in your new bug. Mike Goodier would best be able to set you onto the right man.

I'm so glad you had a successful season on French Frigate Shoals, and I find it very interesting that the nesting season appears to be so condensed. You have a good chance to establish for the record the characteristics of this breeding population, and it looks as if a number of interesting things might become apparent.

Yes, it is true that this year Mariculture had a really sizable nesting of their captive stock. We have yet to establish beyond any doubt the fact of captive nesting involving eggs fertilized in captivity and a number of other comparable points, but I think the break-through occurred. I am very optimistic now about the establishment of the green turtle as a true domestic animal in every sense of the word. Mariculture is strongly research-oriented and no place else in the world has their potential for developing this kind of basic knowledge and expertise.

I have also received your form letter regarding the new state of Hawaii regulations on turtle catching and will write to Mich. Takata.

Mahalo and aloha,



J. R. Hendrickson

P.S. Would you object to my sending a xerox of your Mycobacterium letter to Rebell? I think he might be much interested and I'm sure he wouldn't "scoop" anything which you might have in mind for publication.

JRH

mo

May 10, 1973

Dr. J. R. Hendrickson
Department of Biological Sciences
University of Arizona
Tucson, Arizona 85721

Dear John:

Thought you might be interested in the work I will be doing at French Frigate Shoals this June and July. The enclosed material explains the project that will be carried out. Both Gene and Dave have been very helpful in the entire matter and hopefully we will obtain significant data. Perhaps next year we can work out a project for French Frigate Shoals on a joint basis as I recall your expressing an interest in this area.

I visited with Al Benedict last month. Apparently the turtles you sent are doing well, although he mentioned that several died in shipping.

I would be most interested in hearing about this years IVCN marine turtle meeting. Any information you can pass on to me would be greatly appreciated.

Best wishes.

Sincerely,

George Balazs
Junior Marine Biologist

GB:ah

enc



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF BIOLOGICAL SCIENCES

9 November 1973

Mr. George Balazs
University of Hawaii at Manoa
Hawaii Institute of Marine Biology
P.O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear George,

Thanks very much for yours of the 5th. I hope that you will have been able to get back out to the French Frigate Shoals by this time.

I'm inclined to agree with you about the Mycobacterium, but it is highly desirable to accumulate all data of this type - one never knows when a presumably rare thing turns out to be of major concern.

Thanks and warm regards.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "John", written in dark ink.

J. R. Hendrickson



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS

DEPARTMENT OF BIOLOGICAL SCIENCES

13 February 1974

Dr. Zoula Zein-Eldin
National Marine Fisheries Service
Gulf Coastal Fisheries Center
Galveston Laboratory
4700 Avenue U
Galveston, Texas 77550

Dear Zoula,

Having read my copy of George Balazs's Feb. 4 letter, I ought to comment.

1. Obviously, George's view and my own on the ethical aspects of this matter are divergent. I felt obligated to protect the author's rights and to honor his courtesy in agreeing to the unscheduled reading of his unpublished manuscript at our meeting in his absence. The issue is a rather tense one at this point in time (as exemplified by the alacrity with which hands went up and one member jumped to his feet to comment on use of the word "parasitize", following the reading). I was not prepared to chance having Ehrenfeld's well-meant paper become a rallying stimulus for a hostile group. This (and larger philosophical extensions in the field of mariculture in general) requires logical thought and deliberate attention, not polemics and emotional treatment. It was good to make people aware, it would have been wrong to promote politics. I was reassured when Richard Parker of the Atlanta HEW lab. spoke up in agreement with me that discussion on the floor at that time would be inappropriate.
2. The matter of whether or not specific guidelines should be established for handling this sort of issue at future meetings, I leave entirely to the Executive Board of the Society. If I were in the future to be confronted with a situation similar to this in the absence of such guidelines, I would handle it exactly as I did at Charleston.
3. The matter of whether or not Dr. Ehrenfeld's paper should be re-published in the Society's Proceedings I also leave entirely to the Executive Board and the Editor, without comment from me.

For your information, I am enclosing with this letter a xerox of Dr. Ehrenfeld's manuscript, which just came out in the Jan.-Feb. issue of American Scientist.

Kathy tells me you may be visiting again soon. I will look forward to seeing you then, and it will hopefully be possible to review her actual research progress -- they are just now completing her research facility.

All the best,



J. R. Hendrickson

c.c. George Balazs
D. Ehrenfeld

Enc.
no



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Gulf Coastal Fisheries Center
Galveston Laboratory
4700 Avenue U
Galveston, Texas 77550

February 15, 1974

AIR MAIL

Dr. George H. Balazs
University of Hawaii at Manoa
P. O. Box 1346
Coconut Island
Kaneohe, Hawaii 96744

Dear George:

Thanks for your kind words concerning the Charleston meeting. Its success was largely due to the personal interest which each of you participants contributed.

Thoroughly understand your points concerning the sea turtle paper. It was perhaps unfortunate that there could not have been more time and that Dr. Ehrenfeld could not have been present. I suspect that part of John's reluctance to discuss the paper in detail was the presence of several people directly concerned with the operation of Mariculture, Ltd.--some of whom would have had very strong feelings. This would really have been quite unfair to Dr. Ehrenfeld who could not have defended his points in person. It would seem to me that the WMS could well be a forum for some discussions of this type--but, of course, this is for the Board of Directors as well as the program chairman to decide.

Page 2. Dr. G. H. Balazs, University of Hawaii at Manoa, Kaneohe,
Hawaii, February 15, 1974

I will forward copies of your letter to Dr. Klussman as incoming President, Dr. James Avault, the editor of the Proceedings, and also to William Shaw, program chairman for the 1975 meeting. I feel that it is the function of these people to make the decision concerning the publication--but I will surely endorse both the principle of free discussion (in the presence of proponents of both points of view) and the publication of such controversial material (preferably with space for a statement of the opposing view).

Sincerely,



Zoula P. Zein-Eldin
Research Chemist

cc: Dr. John Hendrickson
Tucson, Arizona

Dr. David W. Ehrenfeld
New York, New York

Dr. Wallace Klussman
College Station, Texas

Dr. James Avault
Baton Rouge, Louisiana

February 4, 1974

Dr. Zoula Zein-Eldin
National Marine Fisheries Service
Gulf Coastal Fisheries Center
Galveston Laboratory
4700 Avenue U
Galveston, Texas 77550

Dear Zoula:

First, I would like to compliment you for the well-done job of organizing the conference presentations. Having attended last years meeting in Monterrey, it was my opinion that things were much more professionally coordinated at our Charleston conference.

As you were previously made aware, a special Marine Turtle Culture Session was held at 12 noon on Thursday, January 24. This was, of course, arranged through Dr. Hendrickson the session chairman. The purpose of this meeting was to present a paper by Dr. David W. Ehrenfeld entitled "Conserving the Edible Sea Turtle: Can Mariculture Help?". The paper is scheduled for publication in the next issue of AMERICAN SCIENTIST. Because the article is critical of large-scale commercial sea turtle culture, and because individuals concerned with sea turtles both from a conservation and commercial aspect were present at the meeting, I considered it to be an opportune time to make the paper's content available for discussion. After telephoning Dr. Ehrenfeld and receiving permission to read the paper, Dr. Hendrickson was most helpful in making necessary arrangements for time and space. Approximately 75 persons were present for the reading and I feel sure that much thought was stimulated concerning the interrelationships of mariculture and conservation. I was, however, somewhat disappointed when Dr. Hendrickson acted to prohibit any discussion after the paper was presented. It was my belief, as it was many others who were present, that this offered an excellent opportunity for leading authorities in the field to rationally debate the pros and cons of the issue. It was indeed most unfortunate that such discussion did not formally take place. Although the author was not present to personally defend his manuscript, surely much constructive discussion could have been put forth by the parties that were present. In any event, perhaps specific guidelines should be established for future meetings to ensure that free discussion can occur providing, of course, that time and space are available and schedules do not conflict.

Dr. Zoula Zein-Eldin
Page Two
February 4, 1974

I would very much like to see Dr. Ehrenfeld's paper appear in our Proceedings. I have contacted him on this matter and it was indicated that he could foresee no problems with AMERICAN SCIENTIST. Hopefully either myself or Dr. Ehrenfeld can hear from you on this matter at your earliest convenience.

With best regards.

Sincerely,

George H. Balazs

mk

cc: Dr. John Hendrickson
University of Arizona
Dr. David W. Ehrenfeld
Barnard College

February 22, 1974

Dr. John R. Hendrickson
Department of Biological Sciences
University of Arizona
Tucson, Arizona 85721

Dear John,

It was perhaps unfortunate that I did not have the opportunity to discuss with you in person my dissatisfaction concerning the absence of a discussion period for points mentioned in Dr. Ehrenfeld's paper. Both in Charleston and later at Grand Cayman the proper occasion never arose where I could express my opinion to you on this matter. In any event, the wheels have now been put into motion for a policy decision to cover such instances at future meetings.

I found my Grand Cayman experience to be very informative, even if it did last only four days. After dinner, on the evening before my departure, we held something of a marathon session in the Caymanian lobby until 2:30 a.m. A point by point discussion was conducted on statements made in Mariculture's promotional brochures, as well as Dr. Carr's and Mr. Naylor's correspondence. It is my understanding that the decision was subsequently made to withdraw the October 1973 Mariculture supplement to the Northwestern from general circulation, however, it will still be made available to prospective stock buyers.

I have heard rumors through the grapevine that Mr. Pryor is somehow involved in the Environmental Research Laboratory's shrimp research as I described to you; he presently has a project funded by the State to grow aquatic animals on the big island. Initial plans relied heavily upon green turtle culture (with most of the facts for the proposal taken from Mariculture's promotional brochure/s), however, I have noted that in a recent progress report he has apparently shifted gears and in the process no longer places emphasis on turtles. The main goal is now oysters and clams with penaeid shrimp and octopus as a "secondary" product. I'm sure that you can adequately evaluate this situation.

Let us stay in contact on matters of common interest.

Sincerely,

George H. Balazs

GHB:md

UNIVERSITY OF FLORIDA
GAINESVILLE, 32601

COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF ZOOLOGY

September 25, 1974

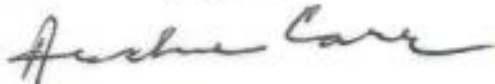
Dr. George H. Balazs
Hawaii Institute of Marine Biology
University of Hawaii at Manoa
P. O. Box 1346
Coconut Island, Kaneohe, Hawaii 96744

Dear Dr. Balazs:

Many thanks for the copy of your letter to Peter Pritchard with the clear and customarily forceful analysis of a dismally cloudy activity.

I hope your letter got the deserved circulation among potentially interested people, pro and con.

Sincerely yours,



Archie Carr
Graduate Research Professor

AC/fs

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February 22, 1977

Dr. George H. Balazs, Jr.
University of Hawaii at Manoa
Hawaii Institute of Marine Biology
P.O. Box 1346 Coconut Island
Kaneohe, Hawaii 86744

Dear George:

By all means send my name to the National Geographic as a character witness. The idea is great, absolutely sound, feasible and sure to yield important results. As proof of my sincerity, and also proof that there's a destiny that shapes our ends I must tell you that only yesterday Karen and I were talking of possible ways to keep her in sea turtle ecology with a physiologic cast, and I said I thought she ought to ask you about the possibility of going out to Pearl and Hermes with some telemetric aids and finding out why green turtles bask there.

No crap--only yesterday it was. Obviously, it was logistically a total pipe dream, and one that you and Whittow are in far better shape than we to undertake. So I really do think you've got a fine project, and I'll be delighted to tell the National Geographic people so.

We are on the verge of publishing a biggish report on the first 21 years at Tortuguero. When the manuscript takes final shape we'll send you a preprint. I'm pretty sure that if tag loss doesn't bother you too much, returns from your tagging are certain eventually to reveal some stirring things.

Karen sends regards, as I do.

Sincerely yours,


Archie Carr

AC:lw

SEA TURTLES- CORRESPONDENCE
CARR-EHRENFELD-HENDRICKSON

1973-1974 G.H. BALAZS FILE