

NEWSLETTER

VOLUME 3, NUMBER 2 - SEPTEMBER 1984

**International Union for the Conservation
of Nature and Natural Resources**

F. Wayne King, Chairman

**Survival Service Commission
Crocodile Specialist Group**

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EDITORS' COMMENTS

It is with the deepest regret and sorrow that we report the death of our dear friend and colleague, and senior member of the Crocodile Specialist Group, Federico Medem. Fred died on 1 May 1984, from cancer, at the age of 71. He is survived by his wife Flor Angela, whom he married in 1963, and their daughter Dina Maria, who was born in 1965.

Fred was born a nobleman, "Friedrich Graf von Medem," in Riga, Latvia, on 29 August, 1912. His family fled to Germany in 1917 during the Bolshevik Revolution. He later returned to Latvia to continue his education. Fred's keen interest in and love of wildlife and people characterized his life. His studies included zoology, geology, paleontology and anthropology. His letters to many of us often reflected his comprehensive knowledge of world history and the people of many lands. Fred received his doctoral degree in 1942, from Humboldt University in Berlin, based on his research on the reproductive biology of marine mollusks.

Fred worked during his college years at the Berlin Zoo, and developed a love for zoos which persisted throughout his life. Your editors were privileged to have been able to spend a day with Fred at the National Zoo in Washington, D.C., as the guest of Michael Davenport, just before Fred died. Fred was overjoyed to fulfill a lifelong wish to see the giant panda from the People's Republic of China. Fred got to offer some carrots to one of the pandas, and stood at the exhibit until he fatigued, marveling at the sight of the animals and talking about China, and his desire to see the land.

Few of us can ever envision this kind and gentle man in any other role. Yet, there was Fred Medem, the patriot and soldier. Fred fought in the underground against the Nazi invaders, and later was drafted into the regular army where he fought on the terrible Russian front. Friends who knew him intimately say the horrors he witnessed were carried throughout his life. On one occasion, his unit remained combat alert, and repulsed an early morning surprise attack by Russian troops who had lain for three days in a swamp in ambush. The attack was unsuccessful because Fred had realized that the strange "frog" calls coming from the water that were supposed to be those of Rana temporaria, were totally out of season, and Fred had reported his suspicions to his commanding officer. Fred received nearly mortal wounds in hand to hand combat near Volgograd, a large hole blasted in his back. He spent nearly two months in and out of a coma in a Leningrad Hospital. For the rest of his life he was plagued by severe pain as a result of his injuries.

Between 1946 and 1948, Fred held positions as Assistant to the Director of the Max Planck Institute in Hechingen Germany, and as an Instructor at the Institute of Zoology at Berne University in Switzerland. Fred joined the faculty of the Universidad de los Andes in Bogota, Colombia in 1950, and in later years held positions as Head of the

Herpetological Division at the Instituto de Ciencias Naturales of the Universidad Nacional in Bogata and as Director of the Estacion de Biologia Tropical "Roberto Franco" until his death. He became a Colombian citizen in 1958.

In 1953, he received a Guggenheim Fellowship which enabled him to travel to the United States and study the major museum collections. He developed close ties with K.P. Schmidt of the Field Museum of Natural History in Chicago, where he later deposited the type specimens of Caiman crocodilus apaporiensis, and with Ernest E. Williams, of the Museum of Comparative Zoology.

Fred spent a major part of his career doing field research on the herpetofauna of Colombia, with a special interest in turtles and crocodilians. He produced over 90 scientific publications in his lifetime. He is best known for his description of Caiman crocodilus apaporiensis in 1955, and for his two major contributions to herpetology in the years immediately preceding his death: *Los Crocodylia de Sur America*, Volume 1, *Los Crocodylia de Colombia*, 1981; and *Los Crocodylia de Sur America*, Volume 2, 1983.

In 1961, Fred received another Guggenheim Fellowship and returned to continue his work in the United States. In 1971 Fred represented his institute at the First Working Meeting of the IUCN Crocodile Specialist Group in New York, and voiced his great concerns for the plight of South American crocodilians, and for crocodilians the world over. As a senior member of the CSG, he was commissioned to conduct a survey of South American crocodilians under the sponsorship of the New York Zoological Society. His reports, based on first-hand investigations throughout South America, still stand as the most comprehensive and reliable data available. Despite declining health and progressive emphysema, Fred continued to do major field studies in Papua New Guinea, Botswana and Surinam at the request of governments and international conservation organizations.

I don't think we can do justice here to Fred Medem, the person. His lengthy letters to all of us containing bits and pieces of his wit, contempt for those who would despoil nature, his kindness and eagerness to help anyone who sought his counsel, are treasures we will always keep. He inspired every student who worked with him. He prodded and guided them, and gave them as an example only the highest standards of professional and personal ethics. He was such an example to us, and I'm sure to all of you as well.

Some time ago Fred wrote to us that he was preparing for the "last field trip." Great men in their field never really die, for they are eternally kept alive by their works and contributions, read and referenced by succeeding generations of students and scientists. Fred was more than a great man in his field, he was a great human being.

(The editors would like to express their thanks to Bill Lamar, who provided us with background information. Bill's obituary on Fred Medem will appear in a forthcoming issue of the Journal Of Herpetology. In addition, a Fred Medem Research Fund is being established. Those interested should contact the CSG Chairman for details.)

At the time of this writing, plans for the Caracas meeting are going well. Thomas Blohm and Cecilia de Blohm have been busy getting the program together and setting up 3 days of field trips. All of you should have received meeting information as well as an official notice from the CSG Chairman. The Seventh Working Meeting of the Crocodile

Specialist Group will be dedicated to our deceased colleague, Federico Medem.

We have received communications from many of you indicating your wish that we continue providing you with book reviews. We will do so. We have also heard that we editorialize a bit too much, or a bit too little, or that what we say gives insights which you enjoy, find offensive, or are delighted with, etc. All in all, your comments appear divided about equally. We'll continue to do the best job with the Newsletter we can. We certainly intend no personal offense to anyone.

In the "Requests" section of the last Newsletter we relayed the request of the Dept. of Herpetology of National Museum of Natural History, Smithsonian Institute, Washington D.C. 20008, for salvage crocodylian material which they could receive under a special salvage permit. Salvage might include skulls from a village bone heap, an animal found dead, or similar remains not acquired by the willful taking of the live animal either directly or indirectly for the purpose of acquiring a specimen. Needless to say, salvage permits are issued only to scientific institutions of the highest integrity. The Smithsonian Institute, Dept. of Herpetology, holds such a permit. It, like many other scientific institutions, relies on such salvage material to complement its collections. We urge anyone who can provide this much needed material to do so, by first contacting the institute, and providing the necessary documentation. We have asked Dr. George Zug to provide us with a "salvage" protocol for inclusion in the next issue of the CSG Newsletter.

Lastly, we are afraid that some of our foreign correspondents did not receive the last issue of the CSG Newsletter (Vol. 3, #1) which we mailed in late February, 1984. Unfortunately, we learned too late that the mail clerk at the Zoo may have put too little postage on some items. We urge you to please send us the tear sheets included in each issue whenever you can. It is often the only way we can verify that you are receiving your copy. As for the clerk, he is no longer a factor, having discovered that crocodile people can be a nasty lot when you mess with their Newsletter! Keep on communicating with us. Myrna and I have nightmares about one day having only a blank letterhead to send out to all of you!

FROM THE CSG CHAIRMAN

As it is expected that several of the African nations will request downlisting of their crocodylian populations from CITES Appendix I to CITES Appendix II, the CSG Chairman has requested suggestions for "a program of coordinated surveys of the African crocodile populations." Once received, these proposals will be sent to the Commission of the European Communities' Directorate-General for Environment, Consumer Protection, and Nuclear Safety. The CSG Chairman hopes that some surveys can get underway prior to the April, 1985 CITES meeting.

The CSG Chairman sent a memo to the membership indicating that the European Economic Community has indicated a willingness to consider underwriting expenses for a crocodile survey of southern Africa, and perhaps a survey to cover more northerly areas in Africa as well. Please send any proposals for such work as soon as possible to Dr. King.

The CSG Chairman also sent a memo to all members, requesting their input and thinking on a draft programme entitled "An IUCN Programme For Promoting The

Conservation Of Wetlands".

AREA REPORTS

AFRICA

Ivory Coast:

Wolf-Ekkehard Waitkuwait is preparing a proposal for conservation of crocodiles and manatees in the Ivory Coast.

Kenya:

The Baobab Farm Ltd., which is managed by R. D. Haller, sent a letter describing the farm and its plans to Rene Honegger, who relayed it to us. This is from the letter:

"Baobab Farm have (sic) since 1975 reared crocodiles as part of an integrated research programme for the rehabilitation of a large coral limestone quarry in Kenya. In 1982 with the permission of the Kenya Government we began an intensive research phase examining different techniques and conducting surveys of the crocodile population in the Tana River.

"We have a small breeding nucleus of animals that have been (sic) raised on site but our interest is to expand to a larger scale. Our proposal to the local Authorities is for permission to trap wild rogue animals considered as a nuisance near human settlements and retain them as brood-stock. We are already producing eggs from the crocodile hatchlings reared since 1975. Our concern however is not to deplete natural breeding populations when trapping. To accurately assess the impact of this more detailed surveys are needed. In fact the whole of Kenya's crocodile population was last surveyed in the 1960s. Lack of Government funds has precluded any further studies.

"... Our interest, nevertheless is to continue the Tana River survey programme we started in 1982 and extend this to other waters."

The Baobab farm needs financial and technical assistance to carry out its plans. It is willing to "provide facilities for perhaps a M.Sc. or Ph.D. study."

Republic of South Africa:

Crooks Brothers Limited, P.O. Renishaw, Natal 4181, under the management of CSG member Tony Pooley, has notified the Statistical and Information Coordinator, World Conservation Centre, that they are a commercial crocodile farming operation known as "Crocworld."

Crocworld has received a permit to keep up to 8,500 Nile crocodiles, and has a CITES permit to import 72 adults from Malawi. The project is to be the biggest

aquaculture project in Africa, and will also include scenic drives, quality and tasteful gift shops, educational displays and both live and graphic exhibits. A large restaurant is planned along with nature trails to enable visitors to explore a variety of habitats.

While emphasis will be placed on education and conservation, the farming operation will include fish rearing as well. Facilities for storing 40 tons of crocodile food, a food preparation room, laboratory, incubation room for 5000 eggs and environmental building for rearing up to 2000 hatchlings are also planned.

(Editors' Note: Good luck, Tony, to you and your family. Keep us all posted. Tony also included a map of the operation, which is most impressive.)

Zimbabwe:

E.V. Cock reports " the third year of drought has resulted in some additional problems to croc farmers, but basically hatching and rearing have been good. The wild crocodile population at Kariba grows apace!"

ASIA

China:

Profs. Shih Ying-hsien and Huang Chu-chien of Chinese Academy of Sciences, Beijing have just finished examining the structure of estrogen and progesterone from the Chinese alligator, and are writing up the results. They are planning to look at chromosome banding and hemoglobin structure next. Their joint project with the Beijing Zoo will be continuing next year.

Prof. Huang sent us reports on breeding success of alligator farming operations in Zhejiang Province.

Chen Bihui of Anhui Teacher's University, Anhui Province, Wuhu visited the Samutprakan Crocodile Farm in Thailand in April. He reported that Samutprakan is a commercial operation and little scientific research is done there.

Mr. Chen reported the following news from the Chinese Alligator Breeding Center at Xuancheng, Anhui Province. There was an outbreak of a digestive system disease among the 1983 hatch. A portion of the group died. The other animals responded to treatment with medications and regained their health. The staff at the Center decided that once the weather warmed up they would move the survivors from the rearing room into a semi-natural pond.

The 1982 hatch was moved in early May, 1983 from the rearing room to a semi-natural area where the animals immediately began building dens. Some of these dens were deeper than 3-4 m. The young overwintered in the dens and are doing very well. Thus, the staff at the Center decided to move the 1983 hatch into a semi-natural area so that they, too, may spend next winter in dens.

This summer the farm was prepared to hatch as many as 300-400 alligator eggs.

The May 12, 1984 edition of The People's Daily, the most influential newspaper in China, ran an article criticizing the Anhui Province Chinese Alligator Breeding Center for violation of laws prohibiting trade in endangered species. Your editors will keep you informed of new developments.

India:

Dr. M. V. Subba Rao of Andhra University, Visakhapatnam, wrote that he delivered a lecture to a local Lions Club group on conservation of Indian crocodiles. He now is studying growth of captive Crocodylus palustris hatchlings in relation to diet.

Dr. Lala A. K. Singh of National Chambal Gharial Sanctuary has written two interim reports on his research, dated April, 1984 and July, 1984. The April report contains "results of a preliminary gharial census highlighting the trend of population growth." The July report deals with "designing a radio-tracking study suitable for gharial juveniles." Abstracts of the reports follow:

"In order to study the population dynamics of gharial Gavialis gangeticus in National Chambal Sanctuary, a field camp of the Crocodile Research Centre of the Wildlife Institute of India was set up in June, 1983 at Deori in Morena District of Madhya Pradesh. Among the various studies undertaken during the last year, one is a habitat reconnaissance and preliminary census along a 467 km river length to determine the effect of releases of gharial juveniles and the present trend of population growth. The second is on designing a radio-tracking study for gharial juveniles and analysis of the movement patterns. Some of the results of these studies are as follows:

"1. Keshoraipatan to Pali, a stretch of 142 km in Chambal and 10 km of Parbati" upstream of its confluence with Chambal at Pali are without any gharial or even any significant population of chelonians. In the former stretch, locations like Dhipri can be used for releasing gharial.

"2. Along Rahu ka gaon to Pachhnada, 300 km of Chambal and 15 km of Yamuna, 415 gharial were counted with a mean density of 1.3 per km. The best stretch was between Basai Dang and Pureini with a concentration of 2.8/km, and the lowest concentration (0.3/km) was downstream Gyanpura, the last nesting site. Gyanpura population is subjected to maximum habitat pressure and deserves greater attention.

"3. In the present count, male:female reation was 1:5; 36 percent in the size range up to 1.5 m were entirely wild recruitments (from uncollected eggs) and 56 percent in the range 1.8-2.7 m included natural population and individuals added through the release program. Indications are that the released gharial have hiterto contributed towards an increased trend in growth in population.

"4. Adult males are always seen singly: the minimum distance between two was 5 km. The group size of other size classes was 3-8 with a mean of 1.3-2.8 per basking group. All nesting sites and 16 important basking zones are located close to nallahs and tributaries which the gharial use during monsoon. Therefore, it will be necessary

to extend the boundary of the sanctuary into such tributaries.

"5. As expected, creche formation is the strongest in hatchlings. Gharials below 0.6 m were seen as solitary animals only 12 percent of the time. The size class 2.4-2.7 m appeared to be the most spaced apart group with the maximum distance between two groups up to 40 km. Stretches such as 145-170 km distance (with reference to Pali) should be given better protection to attract size groups between 2.4-2.7 m and above because a future paucity of suitable 'adult areas' is anticipated.

"6. From data on uncollected nests it is deduced that up to 6.6 percent of hatchlings may be surviving in the wild. These hatchlings have dispersed up to at least 40 km in the downstream.

"RADIO-TRACKING (1.7-1.8 m gharial)

"7. Radio transmitters and other accessory equipment used for alligator research in the USA were tested with gharial juveniles in the field and specifications for transmitters suitable for gharial have been determined: Size L x B x H x W: 8 x 2 x 2 cm x 50-70 g; antenna: perfectly flexible vertical 35 cm whip; insulation: acrylic - complete and strong; attachment: 4 nos. insulated composite wires; range: 5-7 km; life: 6 months; pulse rate: 70/min.; pulse width: choice after meeting the above.

"8. The most satisfactory mode of attachment of transmitter on gharial juveniles: stitch it on the top of the tail at the double crested region.

"9. Movement and habitat selection:

a) Maximum distance moved by

i) gharial rereleased 60 km upstream of capture site = 38 km toward downstream in 6 months (Dec.-June);

ii) wild gharial released 60 km upstream of capture site = 14 km toward downstream in four months (Dec.-Mar.);

iii) gharial rereleased at the site of capture = 6 km downstream in 15 days and 3 km downstream in 20 days (June).

b) Three relocated gharial moved toward the capture site in the downstream and one gharial released at the site of capture was close to its usual 'residential site.'

c) The maximum duration spent by any relocated gharial at one place = 3+ months.

d) With the rise in water level up to 2 m the movement is either in the upstream of into an adjacent tributary.

e) Relocated gharial move to join resident groups of similar size gharial. Disturbances reflect immediately on the new entrant and the latter moves away in search of a fresh group.

f) Most long range movements in relocated gharial occur during the night. A good record = 11 km in the downstream overnight.

g) Main period of activity: evening, after sunset 3-4 hours.

h) Feeding hours: after 2-3 hours basking in the morning and again around and after sunset."

Lala further reports that "gharial have bred in the wild in Mahanadi after a lapse of 10 years. The last successful breeding was in 1974. As far as I see this is not by our released ones but through the juveniles, now matured, seen since 1975. One clutch was laid. It was left unnoticed until hatching took place. Sixteen hatchlings were collected from the river and now are reared at Tikerpada. Thus protection and declaration of the sanctuary have at last shown results."

Japan:

On February 29, Mr. Satoshi Kimura, President of the Atagawa Tropical and Alligator Garden, Shizuoka Prefecture, visited with us in New York. He lists 27 species and subspecies of crocodylians as current residents of his farm. Many of these species have been bred at the farm. Mr. Kimura, speaking to us directly and through a family friend, Mr. Sadao Tambe, who served as interpreter, stressed his great pride that no plant or animal has ever been sold from the Atagawa Farm, and no product has ever been made from the farm's plants or animals. This is quite an impressive record, considering the size of his collection. The garden is primarily botanical, with crocodylians and several other species of animals maintained only as a sideline. Mr. Kimura is anxious to obtain some breeding stock of Crocodylus johnstoni to complete his collection. A short film he brought showed many healthy-looking, active animals.

Malaysia:

A copy of the preliminary report by Rom Whitaker and the Sabah Forest Department on the status of Crocodylus porosus in Sabah indicated that "a previously widespread crocodile population has been decimated, mainly over the past 20 or 30 years to a few scattered relicts. This has happened as a result of: 1) government policy from the 19th century to the 1950s to exterminate crocodiles by paying bounties for every one killed, 2) intensive exploitation for the skins, especially during the 1950s-1970s, 3) physical disturbance to main breeding areas, by fisherman in mangroves and heavy use of the larger rivers for transporting logs, over the past 30 years." They did not see any Tomistoma in the area, although the species is found in freshwater. Proposals for protection of the species and farming were included.

AUSTRALIA

Laurie Taplin has moved and is now working for the Queensland National Parks and Wildlife Service in Townsville, where one of his responsibilities is to inventory the natural resources of Queensland, including assessment of northern wetlands and crocodile numbers. He has completed writing up his work on salt and water balance in Crocodylus porosus, but is continuing the comparative salt gland anatomy and physiology study. He finds it difficult to obtain material for this work. He and Gordon Grigg are continuing their study of salt water dwelling Crocodylus johnstoni.

Grahame Webb of the School of Zoology, University of New South Wales, sent us the following: "Most of 1983 was spent in examining the dynamics of embryological development and sex determination in Crocodylus johnstoni and Crocodylus porosus. Anthony Smith is into a Ph.D. program on C. johnstoni sex determination as it relates to sex ratios in the field. Pete Whitehead is into an M.Sc. program on embryonic respiration in both C. johnstoni and C. porosus. Charlie Manolis is completing a detailed assessment of the historical aspects of croc numbers, etc. in Australia. Glen Edwards has completed a detailed morphometric analysis of C. johnstoni. Al Bennett and Roger Seymour carried out a study of the physiological responses of C. porosus to struggling during capture -- large crocodiles will struggle until blood acid levels are incredibly high."

A Crocodile Conservation and Management Conference will be held in Darwin January 14-18, 1985, under the auspices of the Conservation Commission of the Northern Territory. The program will cover world crocodile management, crocodile management in Australia, and selected issues in management including effects of capture and handling techniques, diseases, reproduction, and embryo development. Many of the speakers are CSG members and represent a cross section of world crocodylian management and research personnel.

CARIBBEAN

Haiti:

John Thorbjarnarson, one of Dr. King's graduate students, has recently returned from Haiti where he has been studying populations of Crocodylus acutus. He wrote: "There are several small coastal populations still scattered around the country, primarily associated with significant mangrove habitats and relatively low human population densities (low for Haiti, that is). None of these populations are very large, however they appear to be holding on. The primary reason for this is the benign attitude of the Haitians towards the 'caiman.' They do not hunt them for either skins or meat, and the human related mortality is restricted to incidental drownings in fish nets or traps. The only exception to this rule is along the border with the Dominican Republic where they will eat crocodile.

"The inland population in Etang Saumatre I estimate to have approximately 500 individuals of all sizes. This population appears to be quite healthy (with a lot of young crocodiles) and may increase in size given current favorable conditions (high lake level, low human activity around the nesting beaches)."

NORTH AMERICA

Mexico:

Marco A. Lazcano-Barrero of INIREB, Chiapas sent us the following report:

"Hopefully I will start a crocodile farm in a couple of months. Although the project has not been officially approved yet, it has had great support from government and non-government authorities. The objectives are to breed Crocodylus acutus and Crocodylus moreletii in captivity for commercial and conservation purposes. The farm

will be managed by rural people of the Lacandon Jungle. It will also serve as a tourist attraction and an educational and research center. The project is part of a program for the establishment and development of the Biosphere Reserve 'Montes Azules,' which is mainly a tropical rain forest in the state of Chiapas near the border with Guatemala. Both crocodile species occur naturally in the area. This will be the first crocodile farm in Mexico aiming for the conservation of C. acutus. The sources of support and funding will be the Instituto Nacional de Investigaciones Sobre Recursos Bioticos (INIREB), the Consejo Nacional de Ciencia y Tecnologia (CONACYT), and the Secretaria de Desarrollo Urbano y Ecologia (SEDUE).

"The recent report, 'Crocodiles as a Resource for the Tropics' mentions in Appendix A that there are several farms in the states of Chiapas and Veracruz. To my knowledge there are no farms in Veracruz, and the one that existed in Chiapas, partially sponsored by the World Wildlife Fund, was closed because oil drilling in the area contaminated the water (Alvarez del Toro, pers. comm.). However, the Secretaria de Pesca (SEPES) has a farm in Chiapas and another one in Tabasco (mostly C. moreletii and a few caimans). A third farm exists in the state of Oaxaca managed by the Direccion General de Flora y Fauna Silvestre (DGFFS) which belongs to SEDUE. The DGFFS has expressed interest in establishing crocodile farms in the states of Colima (C. acutus), Quintana Roo and Yucatan (C. moreletii)."

(Editors' Note: We, too, found inaccuracies in "Crocodiles as a Resource for the Tropics." We also found inaccuracies in the as yet unpublished section on crocodylians in IUCN's, Wildlife Trade Monitoring Unit's, "A Survey of Wildlife Farming Operations." If you have not received a prepublication copy of it, you may wish to contact Richard Luxmoore, Wildlife Trade Monitoring Unit, IUCN, 219(c) Huntingdon Rd, Cambridge CB3 0DL, UK.)

United States:

In the U.S., passions run high when it comes to discussion of our native American alligator. There are individuals who favor deregulating the species throughout its range and leaving it open to commercial exploitation. There still are ardent conservationists who oppose any killing at all of the animals. There are those members of the CSG who favor controlled harvesting with responsible management plans. Last of all, there are the average citizens who are terrified of alligators showing up in their swimming pools, lakes, backyards or any other human stomping ground.

This issue of the Newsletter gives a view of several sides of the alligator "problem" in the U.S.

An article in the December, 1983 issue of Entrepreneur: The Business Opportunity Magazine discussed alligator farming as a means of making money. Don Ashley, representing himself as a "consultant" for the Florida Alligator Farmers Association, was quoted as saying, "The Americans are betting (and betting heavily) on an eventual shortage of skins worldwide because the programs in these other countries aren't managed well; there aren't any good ranching or farming programs in these countries (South Africa, Botswana, Zaire, New Guinea and Australia). Therefore, when the foreign sources of wild reptiles are decimated, as the alligator was in America, the entire exotic-leather industry will be forced to turn to farm-raised sources of skins to maintain a supply. I happen to think that's an accurate projection." According to the article, the Florida alligator farmers would like to effect a change in Federal laws,

to allow export of alligator parts, such as teeth, penes, and gallbladders, to a potential market in Asia.

The following report by Dennis David of the Florida Game and Fresh Water Fish Commission, Alligator Management Program, on the January, 1984 sale of alligator hides in Florida was received too late for inclusion in Vol. 3 (1).

"The Florida Game and Fresh Water Fish Commission offers nearly 2,500 alligator skins for sale annually. These skins are products of a nuisance alligator removal program and an experimental wild alligator harvest the Commission conducts. The agency requires all skins produced by these programs be sold under its direction. Sealed bids are solicited by the Commission from potential buyers worldwide in an effort to obtain the best fair market price.

"The Commission received seven sealed bids at its most recent sale, January, 19, 1984, when it offered 1,791 skins averaging seven feet (2.1 m) in length. Participants chose to submit bids from the U.S., Europe, and Japan. Plott Hide and Fur, a U.S. tanner of alligator skins, was awarded the bid. Offers for the skins ranged from U.S.\$10.21 to \$15.12 average per linear foot. This is equivalent to an average price of \$2.38 per belly cm for Florida's American alligator skins. The price reflects a 60 percent increase over prices offered for skins in July, 1983."

The Alligator Committee of The Wildlife Society - Southeastern Section is again coordinating the Cooperative Alligator Survey through Robert Chabreck of Louisiana State University, Baton Rouge.

The State of Georgia has petitioned the U.S. Fish and Wildlife Service for delisting of its populations of the American alligator. This seems to be the trend within the southeastern U.S. Rumor has it that South Carolina will be next to petition for delisting. The current U.S. administration has no interest in retaining the alligator listed under the endangered species category and it is expected that the alligator will, in the near future, be removed entirely from endangered species protection. There are a few scientists at Fish and Wildlife who are opposed to this, but they are having a more and more difficult time fighting the tide to allow commercial exploitation of the American alligator throughout the U.S.

Howard Hunt of the Atlanta Zoological Park wrote to tell us that he opposes the removal of the alligator from the Georgia list of protected species. His studies indicate that "Georgia's alligators concentrate in small pockets in the extreme southeast and southwest of the state. Georgia alligator nests are extremely vulnerable to predation, young grow slowly, and few young survive their first year."

George Campbell of the Southwest Florida Regional Alligator Association has written the following to introduce his group to us:

"The Southwest Florida Regional Alligator Association, founded in 1974, was chartered by the Florida Game and Fresh Water Fish Commission, in those days under the direction of Dr. Earl Frye, and had several objectives, a number of which we have

achieved.

"Shortly after we founded the Alligator Association, we sponsored a Sanibel City Ordinance to prevent feeding of wild free-roaming alligators. We have experienced, over the years, that the no-feed-em law works. Our animals are much less a problem -- there are many fewer nuisance alligators here than elsewhere in the state of Florida. Today Sanibel Island and adjacent Captiva Island are the only two communities where the Florida nuisance alligator program is not conducted. All problems are handled by our Association and none ever involves the killing of an animal. We translocate them and we 're-educate' them. We undertake to disorient the animals to prevent their returning to 'square one' which is the nature of the beast. We disorient by banging them around in the back of a truck for a couple of days. This has only moderate success. More recently we have attempted to disorient their homing abilities through the use of permanent magnets cemented to the cranial shelf. The limited experience we've had with this system seems to be paying off.

"We also pioneered the idea of re-educating 'tame' animals. We simply drive them off with bamboo sticks when they get too tame after being conditioned by feeding. We can make an alligator so unhappy with the human species that he never wants to see any of us again. We are extremely careful not to damage their eyes, but the cane is not spared on other parts of the body -- and it works.

"Our lectures and educational discussions have had positive results: today on Sanibel Island the feeding of alligators is frowned upon by all except the dimmest-witted citizens. Any stranger who is foolish enough to feed an alligator is usually jumped on with passion and alacrity by his peers or anyone who witnesses this activity.

"Sanibel Island has also pioneered the use of underroad animal crossings. We have 11 animal crossings going under our main highway and these are used by small animals. Unfortunately, the diameters are a bit small for large alligators, but many creatures such as otters, opossums, raccoons, small alligators and Indigo snakes use them.

"We are advocating the construction of large box culverts under Interstate Highway 75 when it is constructed to go across the state at the present site of 'Alligator Alley.'

"The Southwest Florida Regional Alligator Association was able to have the law against feeding free-roaming alligators extended throughout the State of Florida. This came at a moment when the management of the Game Commission was being changed and there was great pressure to institute the nuisance alligator program which 'controls' (read 'kills') nuisance alligators. The people who do this are ex-poachers. This is like hiring ex-bank robbers to guard banks on the theory that they know more about bank robbing than anyone else. They're the only ones who have the necessary skill and experience. The only places in Florida where they don't operate is on Sanibel and Captiva Islands.

"It has always been our contention that the alligator control program did not need to have been implemented. It is our experience on Sanibel that alligators that are not fed are not nuisances in 99.9 percent of the cases. That one tenth of one percent does exist and there are a couple of dangerous animals right here on Sanibel, but I believe that they are old animals left over from the days when feeding alligators was very prevalent."

Probably the biggest alligator story of all in the U.S. was the tragic killing of a young Florida boy while swimming in an alligator inhabited canal. For many years, Howard Hunt has investigated alligator attacks on humans. He provided us with the following report:

"Attack date: 6 August, 1984, 4:30 P.M. Attack site, a one-quarter mile brackish canal off St. Lucie River. There was a fish cleaning station 200 feet from the attack site.

"I got this information from Tom Stice, who did the necropsy, and the Port St. Lucie Police Department. 4:30 P.M.: One boy left the water and got on boat dock from which he saw a large alligator surface swimming for a second boy who also was surface swimming. A woman also saw the alligator and she yelled a warning and so did the safe boy. But the victim swam on and did not look around until the second yell from his friend. When he looked around and saw the alligator he swam with frantic strokes but did not say anything or scream or make any human vocalization. Ten feet from shore the alligator got the boy's arm, spun and submerged. The alligator, with the boy in its mouth, came up five minutes later. The boy was not alive. Police shot at the alligator and the alligator submerged. The alligator came up again, shot in the head, but still with the boy in its mouth. The boy was dropped and sank, and the alligator submerged. The alligator came up again and the top of its skull was blown off by a Florida Game and Fish Commission officer. The boy died of drowning. His chest was crushed. The boy weighed 80 pounds. The alligator was thin and appeared quite old. On necropsy, the animal appeared emaciated and indentations were seen in the head where the neck muscles attach. The animal was 12 ft. five inches long. Its eyes were okay. The stomach contained fish floats, a few pieces of turtle, and crab shells. The alligator was missing one-third of its teeth; the rest of the teeth were below average size."

Howard has several hypotheses as to why the attack occurred. One is that the animal was starving and was used to picking up fish -- bobbing float and all -- from the nearby fish cleaning station, and thus would be expecting food in that area. Another hypothesis is that the alligator may have been unable to identify the swimming form of the boy as human, especially as the child never attempted an upright stance nor made any human sounds. Howard is planning to visit Port St. Lucie to interview people involved and visit the site of the attack.

The end result of this attack is that alligators are being removed as nuisances from the canal.

The Wade Jones Co. of Texas, Inc. has available a feed grade vitamin premix for use as a dietary supplement. For information on use and administration of the premix, contact Ted Joanen, Rockefeller Wildlife Refuge, Grand Chenier, Louisiana 70643. For product technical information, price and orders contact Mark A. Staton, P.O. Box 12194, San Antonio, Texas 78212, telephone: 512-656-2041.

For several weeks in August, a suburb of New York City was plagued by alligator sightings at the local lake. On the evening news, we were treated to the ludicrous

sight of police helicopters hovering over the lake by day, as area residents expressed fears for their lives and property, and people attested to seeing whole families of alligators. After nearly a week of this provocation of hilarious cackling from the home of your editors, the State decided to give up the hunt and thrust the burden on the U.S. Fish and Wildlife Service. USFWS immediately requested the services of Peter and the New York Zoological Society. Your editors spent a lovely few hours one night paddling around the lake along with an agent from USFWS, and the two small alligators were neatly and quietly captured and sent to a home at the Staten Island Zoo. Rumor has it that the animals -- a third had been captured a week previously -- were dumped by a disgruntled pet owner who threatened to place alligators in county waters weekly until local taxes were reduced. Our only regret about the whole episode was that Bill Magnusson had just left New York. We wanted to show him how we New Yorkers catch the big ones!

OCEANIA

Papua New Guinea:

The U.S. National Research Council's report on crocodile farming in PNG was publicized in the June issue of Science 84. It's good to see international publicity for crocs.

Philippines:

Prof. Alcala has successfully hatched Crocodylus novaeguineae mindorensis.

SOUTH AMERICA

Brazil:

Bill Magnusson wrote the following in response to Stefan Gorzula's request for an exchange of ideas on standardization of terminology on crocodilian densities:

"With a few exceptions (such as Savanna lagoons during the dry season) we almost never know the absolute density of crocodilians and attempts to estimate it are incredibly expensive (cf Harry Messel's work in Australia). Normally we work with 'observed density' which under some conditions can be used as a 'relative density.'

"There are many reasons that we may want to know the density of crocs in an area but I will confine my remarks to the use that is probably of greatest interest to Newsletter readers: that is, to determine whether a population is increasing, decreasing or remaining stable under a particular management regime (e.g., illegal hunting, legal hunting, cessation of hunting, restocking). In this case we want our 'observed density' to be useful as a 'relative density' (i.e., 'The observed density in 1979 was double relative to the observed density in 1982.'). To simplify things I will assume that we are discussing only one size class, but in the real-life situation a researcher will have a number of size classes, the exact number depending on his ability to differentiate sizes in the field.

"The first thing to note is that the observed density can generally only be considered relative to another observed density in the same habitat. We must therefore divide the region into habitat types and, where possible, do replicate sampling in each. The results might look something like this: 'The region covers 400 km², contains 6 large lakes with a combined shoreline of 200 km, and 250 km of rivers. The density of crocs was $X \pm Y$ per km of lake shoreline and $W \pm Z$ per km of river.' What happens if the river starts to widen or the lakes become very small? Logic suggests that we will count both banks separately if the crocs inhabiting them represent populations, but we rarely have that information. In fact, we are doing line transects, so a good rule of thumb is to count banks separately if you can't survey both banks from the center of the river with a moderately powerful spotlight. The methods section of the report must be detailed enough to identify which method was used in which area. Perhaps we should stratify the area into three habitats: 6 large lakes, 200 km of river less than 100 m wide, and 50 km of river in which the banks were considered independent sampling units.

"In the above example I would be inclined to treat very small lakes as short rivers, i.e., use their longest dimension, to give a result as X per km. My reasoning is that small lakes are usually only seasonally small. At other seasons they link up to form part of river or stream systems. I may be interested in comparing wet and dry season densities in the future and I will then have results as numbers per km in both seasons. Also, kilometers are sampling units that are easy to apply and for which a realistic variance estimate can be made. The mean number of crocs per m² (or hectare) is easy to calculate, but think about the sampling design necessary to obtain a variance estimate. The effort to make a grid for even a small pond is daunting. However, it is important to note that my decision depended on the form of the expected follow-up surveys. What if the wet season surveys were to be strip transects by helicopter over flooded savanna that would give an estimate of the absolute density as numbers per km²? I would then have to have a dry season estimate as numbers per km². An observed density of 286 per km may be the same as 0.013 per m² but there is no way to visualize the relationship.

"An index of density is useful only if we know the total area and the amount of habitat in the area. For example, imagine two 40 km² areas of savanna habitat. Each contains 4000 crocs but one has 10 dry season refuges and the other 40. The density per refuge (independent of size) will be 400 for one area and 100 for the other. Dry season surveys of several ponds in each area would indicate that the first is much better croc habitat but this may lead to a very bad management decision.

"The above comments relate to general surveys. If the researcher had specific questions to ask, such as the relationship between the number of crocs and the productivity of the environment or physical factors such as temperature, he might want to collect data as crocs/m² of H₂O, crocs/km of bank, crocs/mg dissolved phosphorus, crocs/m² of aquatic macrophytes, crocs/m³ H₂O at depths greater than 1 m, or some other relevant unit. I therefore agree with Stefan that it is important to standardize terminology, but I think that the major difference is between 'observed' and 'absolute' densities, and it is more important for a researcher to standardize his data collection in relation to the work that will be done in the area in the future than in relation to what other researchers are doing in other parts of the world. The day that we have the type of data (absolute densities) for crocs that will allow interhabitat, let alone interspecific, comparisons is a long way off."

Renato Cintra, Instituto Brasileiro de Desenvolvimento Floristal, Caixa Postal 31, 78.000 - Cuiaba - Mato Grosso, Brazil, is working with caiman in the Pantanal. He invites anyone who can visit to do so. He has a keen interest in all animals, especially birds. Renato would like to increase his contact with other researchers working with crocodilians.

Venezuela:

Tomas Blohm has been occupied at his ranch, Hato Masaguaral, building breeding facilities for his Crocodylus intermedius. He wrote, "We have 6 pools of 25 x 25 m and one of about 60 x 24 m. That amounts to about 1.2 acres of lagoons. I raised a site, also 25 x 25 m, to about 1.5 m above the level of the swamp to set up a small building to be used for a residence and lab. It will have its independent aqueduct, of which the well and windmill are already installed and pumping water nicely. The building will have an incubation room. Around it there will be a set of cattle troughs; ideal for housing hatchlings saved from drying-out natural pools. There will be a small parking area and an observation tower, most likely the structure of the windmill itself, which is 40 feet high from where all except two pools are most visible. The view to the other two pools is blocked by trees which themselves serve as supports for blinds."

Tomas noted that his female C. intermedius, which attempted to attack one of us (MEW) last year, built her nest four months later, at the site of the attack. This is an area she has not used before for nesting. The ground is packed very hard there, and all of the eggs were crushed.

Tomas reported that Andres Eloy Seijas was censusing "Crocodylus acutus" populations.

Stefan Gorzula reports: "I have started doing some counts of Paleosuchus trigonatus in the Rio Yuruani, in the Gran Sabana area of southeastern Venezuela. So far the densities observed have been low (7 in 12 km of river, compared to one about every 300 meters in the Rio Botanamo in the lowlands). Four of us were "sunk" by a Paleosuchus that bit our Zodiac after I had made some imitated calls of Caiman crocodilus. The caiman swam directly to our dingy and bit it twice!!"

[NOTE: I'll bet that not only did the caiman swim away with one heck of a smug look on his face, but he probably had some of his buddies taking pictures from the bushes. Take a tape recorder with you if you get to go back to the same spot, Stefan. Myrna would like to analyze the sound of caiman giggling, and compare it to the sound of Crocodylus intermedius uproarious laughter, after a short but effective chase last year at Tomas' ranch!!! - Peter]

TRADE

K. R. Van Jaarsveldt, Binga Products, Harare, Zimbabwe, reports that Zimbabwe is one of the largest crocodile farming countries in the world, with far ranging interests in developing the market for hides and products. Their main areas of trade are France, the United Kingdom and Japan. He urges the U.S. Fish and Wildlife Service to allow the

importation of Zimbabwe skins and products manufactured from Zimbabwe Skins into the United States.

Zimbabwe currently receives U.S. \$3.50 per cm belly width combined, which given the present rates of exchange, comes out to Z \$135.00 to Z \$140.00 per skin. While American alligator may be sold at prices comparable to other "classic" skins as finished hides or products, he reports that the value of skins in trade follow this order: #1 - Singapore Small Scale (Crocodylus porosus), #2 - Rhodesiana (Crocodylus niloticus), #3 - Singapore Large Scale (Crocodylus n. novaeguineae), and #4 - American Alligator (Alligator mississippiensis).

E.V. Cock reported that "Zimbabwe 'tagged' skins are getting a name for quality on the markets, and that the prices are right. With one outlet for all five farms, with a sixth which has just started but not yet producing, better grading and bigger batches of similar skins are available."

In New York, this editor has in past months examined a number of Crocodylus niloticus handbags which were imported with Zimbabwe documentation, and appeared to be from skins of farm reared animals. The U.S. Fish and Wildlife Service office in New York retained the items pending a directive from Washington. As I understand it, the items could be released to the importers at a later date. Items were valued in the U.S. \$600 to U.S. \$800 range, for small to medium sized bags.(P.B.)

George Campbell reported that an albino Crocodylus porosus was recently purchased by Charoon Youngprapakorn for \$10,000. It died soon after arrival in Bangkok. On another front, he also reported seeing a crocodile sportcoat which was sold in Amarillo, Texas, for an astonishing \$15,000!

We have learned through word-of-mouth that France imported 63 percent of the Papua New Guinea skins, and Japan imported 34 percent of the skins in 1982. The role was reversed in 1983 with Japan importing 62 percent and France 37 percent.

It was reported to this editor that U.S. fabricators are paying U.S. \$16.00 per belly inch for finished imported skins of American alligator, in Spring, 1984.

It appears that this year's U.S. fall fashions continue to focus primarily on southeast Asian snake skins of just about any species. Some African python shows up from time to time. The second most used types are South American boas. Ralph Lauren, a leading fashion house, featured a line of fall fashions in the 9 Sept. 1984 New York Times, which included numerous accessories including crocodilian skin products, primarily South American caiman. It was the only promotion we noted with croc products. Woven domestic leather products are very much in fashion this year. A spot check of boutiques and quality counters in department stores does not reflect a great consumer interest in crocodilian products, at this time prior to the Christmas buying season.

Products made from caiman skins continue to be the type most often seen, when crocodilian products are seen at all. A new look has emerged this year from Italy in the form of "SOFTE CROCO," or variations of the name. It is the skin of Caiman crocodilus, often C.c.yacare, which has been tanned to a soft textured finish, dyed a natural brown or black, and left unglazed. The osteoderms are de-ossified by pickling. It seems to be the old "softy croco" tannage with a new push. Items include Italian

made shoes (U.S.\$150 to \$250 for ladies' shoes, \$300 to \$500 for men's shoes), and Italian made handbags and tote-bags in a variety of sizes and shapes (U.S. \$400 to \$1000). Price seems to depend largely on the name of the manufacturer, how much skin is used, and least on the type of skin. The highest seen yet, are some pairs of Italian made men's wing tip and loafer type shoes, of caiman skin, priced at U.S. \$625. I have yet to see caiman products labeled for what they are.

Unfortunately, many Italian and other manufacturers, when supplying products made from quality classic hi-gloss skins, appear to utilize any species they can get that fits the order, or the design characteristics they desire. Forensic examinations disclose this includes many items containing the endangered black caiman Melanosuchus niger, along with Crocodylus cataphractus, and Crocodylus niloticus, often on the same product which may be documented as anything from caiman to alligator, to the fictitious species name of "Jacaruxi" (advertised as a lizard, especially raised in farms for the shoe trade!).

These items are seized on import, and the importers are fined, not to mention the monstrous legal fees involved, and the loss of often pre-paid merchandise. This type of business dealing and skin utilization only serves to continue the random use and depletion of already critically endangered species, does a disservice to the legitimate producers by making merchandisers turn to products they can import without worrying about legal difficulties or risk incurring a bad consumer image, and results in even more restrictions by wildlife agencies and a continued depressed market for crocodilian products in general. In short, it does little good for the reputation of the producer of a legitimate skin if that skin is put on a product, which is improperly documented and seized, along with a protected species by a manufacturer. How can the merchandising importer take a chance on buying such products for distribution, take orders from retailers for that product, and spend thousands of dollars for promotion, when he can't be sure he is not going to get burned and be unable to fill his orders as well. Why should he? It is far better for him to help foster a fashion in something in woven domestic leather, which he is certain he can supply to his customers without reservations. All the importer or merchandiser learns by such experiences is that croc products mean "bad news."

Peter Brazaitis

ZOOS

MIKE DAVENPORT'S COLUMN

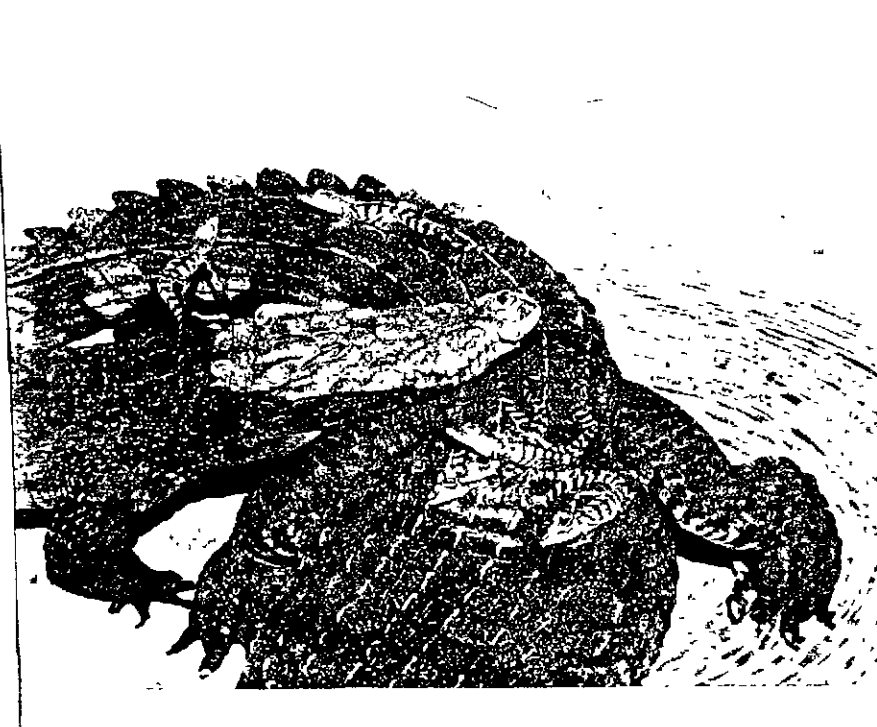
Crocodilian Hatchings in U.S. Zoos

The following are crocodilian hatchings which occurred in U.S. zoological parks between 16 October, 1983 and 31 August, 1984. This information was gathered by canvassing these institutions by telephone.

| <u>Species</u> | <u>Number hatched</u> |
|--|------------------------|
| <u>Alligator mississippiensis</u> Busch Gardens, Tampa, Florida | 15 (7 did not survive) |
| <u>Alligator sinensis</u> New York Zoological Park, Bronx, New York | 5 (1 did not survive) |

| | |
|---|-------------------------|
| <u>Caiman crocodilus</u> Busch Gardens, Tampa, Florida | 11 (2 did not survive) |
| <u>Crocodylus niloticus</u> Busch Gardens, Tampa, Florida | 19 (12 did not survive) |
| <u>Crocodylus rhombifer</u> National Zoological Park, Washington, D.C. | 7 |
| New York Zoological Park, Bronx, New York | 6 |
| <u>Crocodylus siamensis</u> New York Zoological Park, Bronx, New York | 1 |
| <u>Osteolaemus tetraspis</u> Jacksonville Zoological Park Jacksonville, Florida | 11 (1 did not survive) |

Michael Davenport, National Zoological Park, September, 1984.



Crocodylus siamensis hatched at Metro Zoo, Miami, Florida, March, 1983, shown with parents. Photo courtesy of W. Ziegler and R. McGill.

REPORTS FROM OTHER ZOOS

R. Howard Hunt of the Atlanta Zoological Park, Atlanta, Georgia, is sending 8

Crocodylus moreletii to the Atagawa Tropical and Crocodile Farm in Japan. He would really like to have a mature male Gavialis as a mate for a female he has. He wrote that "this year the C. moreletii built their usual two nests. Saw one build her mound. She scratched up material from 5 m out. She laid 50 eggs. I'm keeping half at 28°C and half at 34°C. Earlier this year I saw a female mouthing a yearling who was freshly dead. Perhaps a large offspring had bitten it as the female had just chased a 1 m individual from the water. She mouthed the dead one gently, creating a wash and flow of water around its body. This was exactly the technique she uses with just hatched babies when she carries them to water. She gently mouthed the dead yearling for nearly an hour. Her teeth did not perforate the body and the procedure could not be interpreted as feeding behavior. If I had to make a guess of what she was doing I would have gone for revival. Finally she lifted her head from the shallow water, bellowed three times at a decibel level comparable to alligators, and then swallowed her dead offspring."

Received from Rene Honegger was this excerpt from the 1983 Annual Report of the Copenhagen Zoo:

"The most famous reptile baby in 1983 was the Nile Crocodile baby. The eggs were laid while the Nile Crocodiles were still in quarantine. We succeeded in hatching one egg in the incubator and during its first 6 months the small Nile Crocodile baby has grown from 24 cm to a length of almost 40 cm."

Bern Tryon of the Knoxville Zoological Park, Knoxville, Tennessee, USA, wrote that two of their four Paleosuchus palpebrosus were exhibiting some reproductive behavior.

REQUESTS

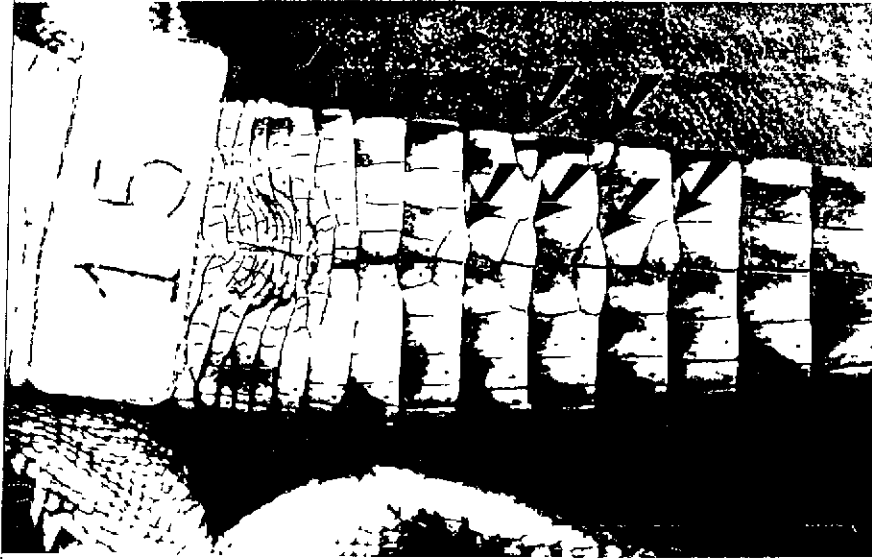
John Thorbjarnarson is trying to collect specific information concerning the timing of nesting in the New World crocodiles, especially Crocodylus acutus. He requests that anyone with information concerning the location, and dates of egg-laying or hatching in the wild, or in captivity, please write to him at the Florida State Museum, Gainesville, Florida 32611, U.S.A. He would greatly appreciate any data whatsoever.

Dr. M. V. Subba Rao, Department of Environmental Sciences, Andhra University, Visakhapatnam 530 003, India, would like to receive recent literature on growth, food, feeding, and ecology of crocodilians.

Mike Davenport and Peter Brazaitis would like to have some dialogue for the benefit of everyone, here in the newsletter, about the techniques in use around the world for incubating crocodilian eggs. Many of us have experienced many failures and some successes, and while we may have some speculative thoughts about some aspect of what we did or another, we don't have sufficient data to substantiate a conclusion. How about a forum here for exchanging these subjective views?

Marco A. Lazcano-Barrero, INIREB, Apdo. Postal 219, San Cristobal de las Casas, Chiapas 29230, Mexico requests information on international trade in Crocodylus moreletii: skins, manufactured products, or live animals. "Morelet's are easy to

distinguish from other Crocodylus species due to the presence of irregular (discontinuous) scales or groups of scales in the subcaudal rings. (See illustration.) Information on legislation and regulations regarding the keeping, buying, selling, capturing and possessing crocodiles as well as information on parasites, diseases and treatment of captive crocodiles will be extremely valuable."



Note arrows indicating subcaudal scalation of Crocodylus moreletii.

BOOK REVIEWS

Look for the following publication by Elliott R. Jacobson, D.V.M. We asked CSG consultant, Dr. E.V. Cock to review a draft for us. Here's his review.

"A Review of Immobilization, Blood Sampling, Necropsy Techniques and Diseases of Crocodilians," by Elliott R. Jacobson, D.V.M.

This is a very comprehensive review and is highly recommended as a reference work for all those involved in crocodilian care. It contains much basic information and comprehensive references for more detailed study.

An alternative site for collecting blood, the temporal vein, is omitted and I would like to see a warning about the dangers of cardiac puncture and the samples obtained in this manner are often contaminated. Hopefully, anyone wishing to use succinyl choline or gallamine will read more about them first and be aware that they have no analgesic or anaesthetic properties, and that there are important precautions required to humans using them.

It was a bit dissappointing not to find some reference to the effects of stress on

crocodiles in captivity. These are however minor criticisms of a very worthwhile study. Dr. E. V. Cock, Chisipite Veterinary Surgery, Chisipite, Zimbabwe.

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PERSONALS

Mark Ferguson has been appointed Head of the Department of Basic Dental Science, Turner Dental School, University Dental Hospital of Manchester, Manchester, England. Local publicity has it that he is the youngest professor in England. On June 22, Mark married Dr. Janice Forsythe. Congratulations!

Marco Lazcano-Barrero has left Merida, Yucatan and is "alive and well and living in San Cristobal de Las Casas." See "Requests" column for Marco's new address.

Tony Pooley left the Natal Parks Board in March to work on starting a private crocodile farm, display center, educational resource center, curio shop, and nature park for Crookes Bros. Ltd. in Natal.

Replying to our comments in the last issue of the Newsletter, when we requested that his wife light incense sticks for all of us, Lala Singh wrote the following: "Pushpa is visibly happy to have found supporters to her 'traditional thought and action' and replies that she certainly does and will continue lighting the sticks for the entire Tribe. That includes crocs and the CSG, poor chaps. Anshuman, now a young man of 2 yr. 2 mos. old, is barred entry into the gharial enclosures. Reason: he

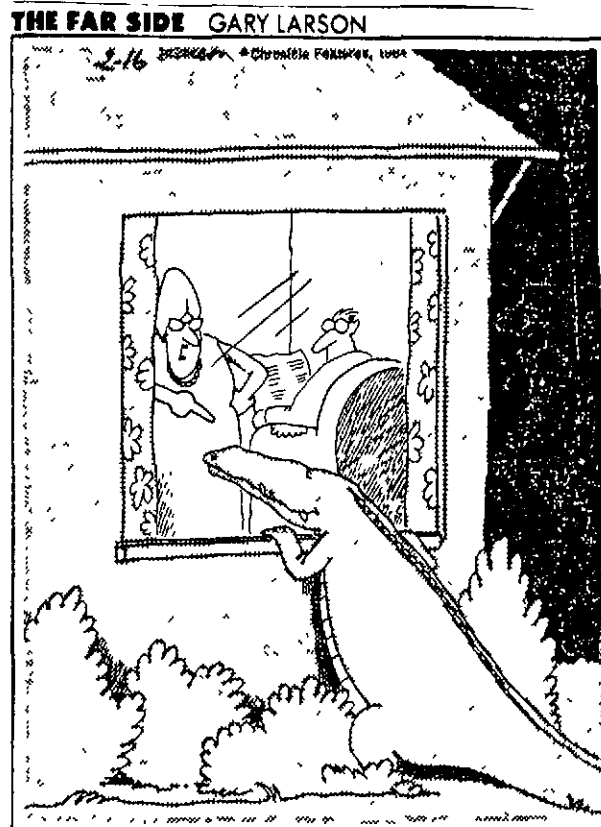
received gharial jaw marks while transferring hatchlings from land into water, and he recently fell into the pool."

Dr. M. V. Subba Rao was elevated to the position of Head of the Department of Environmental Sciences, Andhra University, on June 9, 1984.

Peter Crawshaw and his wife Mara announce the birth of a new baby boy, David Edward Crawshaw, on 21 March 1984. They have two other children, Danielle, aged 9, and Beatriz, age 6. Our warmest congratulations and the very best of luck to all of you!

Lastly, Myrna and I want to thank all of you for the flood of warm good wishes so many of you sent to us. Croc people are the best in the world, and we consider all of you our dearest friends.

Peter Brazaitis and Myrna Watanabe



"It's back, Arnie! Get the book! We're gonna settle whether it's an alligator or a crocodile once and for all."

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