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AUSTRALIA,

# **CROCODILE SPECIALIST GROUP**

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## **NEWSLETTER**

VOLUME 8 ■ APRIL 1989 - JUNE 1989



International Union for Conservation of Nature and Natural Resources ■ Species Survival Commission

# CROCODILE SPECIALIST GROUP

## NEWSLETTER

VOLUME 8  
APRIL 1989 - JUNE 1989

International Union for  
Conservation of Nature and  
Natural Resources

Species Survival Commission

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COVER PHOTO: *Paleosuchus palpebrosus*  
in the St. Augustine Alligator Farm's  
Crocodilian Center, Ocala, Florida, U.S.A.  
Photo Prof. Harry Messel.

## EDITORIALS

Without prior announcement and without fanfare, the chairmanship of the CSG has changed. Deputy Chairman Professor Harry Messel has become Chairman, and I have replaced him as Deputy Chairman. The switch was made with the full approval of Grenville Lucas, Chairman of the Species Survival Commission.

I have served as Chairman of the CSG for fourteen years -- continuously since 1973, save for the two year tenure of Howard (Duke) Campbell from 1979 to 1981. That is long enough for anyone to serve as chairman.

Not everyone can be chairman of an SSC Specialist Group. Even if they are excellent scientists and dedicated conservationists, they might not have the time or resources necessary to carry out the duties. Specialist Group chairmen are not salaried by the SSC or by IUCN, neither are their expenses paid. Chairman, like the Group members, are volunteers who must cover their own operating expenses.

Having time to devote to the job is critical. Because crocodilians are the subject of a large and valuable international trade, hundreds of people, not just the CSG Members and Correspondents, want to talk to the Chairman about crocodilian conservation, management, trade, CITES regulations, and farming. On a typical day during the past year, I received two international and four domestic telephone calls, sent or received four fax messages, met with two or more graduate students, and answered eight to ten letters. In addition, time was spent drafting or revising proposals for surveys, reviewing manuscripts, and editing publications - all having to do with crocodilian conservation. To the extent possible, these contacts were referred to CSG members or other experts. Unfortunately, many of the people want to talk to the Chairman and no one else. After spending several days with me in Gainesville recently, Tony Pooley remarked that he did not see how anything got done with the constant interruption of phone calls and meetings.

The cost of postage, telephone, fax, and secretarial or technical assistance is high, and the cost of travel to attend conferences and to meet with government officials is prohibitive. The chairman must meet these expenses as best he or

she can. Additional funds are needed for publication of PROCEEDINGS of the meetings and for NEWSLETTERS. The CSG chairman has it easy because after the present Chairman and Deputy Chairman raised money to cover the expense of assisting members to attend the first three meetings of the CSG, the members decided that each participant in the meeting should be responsible for covering his or her own expenses.

I have been fortunate in working for institutions that allowed me to devote as much time as necessary to the chairmanship and even picked up postage, telephone, and many of the other expenses associated with the office. However, during the last three years I have been without secretarial support, which severely cut into my ability to communicate with members. This became even more critical when I began to be out of the office for long stretches, coordinating surveys of the crocodilians of Central and South America on behalf of the CITES Secretariat. The CSG deserves more, not less time from its chairman, so I decided to hand over the chairmanship and to devote myself to the surveys and to training graduate students.

When he learned of my decision to step down, the SSC chairman immediately asked Deputy Chairman Messel to accept the Chairmanship of the CSG. Harry will be a superb chairman and under his leadership the CSG can look forward to continued growth and much more activity in its program. -- Prof. F. Wayne King, Deputy Chairman.

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The resignation of Professor Wayne King as Chairman of CSG, after a period of some 14 years has highlighted a number of points. The first is that during the period of his dedicated, firm and knowledgeable leadership, interest in crocodilian conservation and sustained yield management and utilization has exploded. From a mere handful of dedicated research scientists-conservationists, the CSG has grown to some 78 Members and 28 Correspondents.

In the 1970s the CSG consisted almost solely of research scientists-conservationists whose main endeavours were directed largely towards the prevention of a further decline in the severely depleted crocodilian populations and the obtaining of essential scientific data, needed to put the crocodilians back onto the road to recovery.

Today the all important scientific research work continues and expands, and is providing the very basis for sustained yield management and utilization of this valuable economic resource. However, the CSG now also includes many individuals who are not research oriented but who lean more towards the management and utilization of the resource. This is a very good thing.

It is thus not surprising that now a small number of those associated with the CSG sometimes give the impression: "Conservation is fine, but how can I make a fast buck out of crocs and use the CSG to do it?"

In some cases it no longer is: "What can I do for crocodile conservation and the CSG?", but instead, "What can the CSG and crocodile conservation do for me?" Now this attitude is understandable and has its merits but it made it inevitable that as the CSG expanded so did tensions within it. Resource utilization and economic related matters have been known to cause problems in the world before! Instead of conservation and sustained yield management going hand in hand, the danger has grown that conservation of the crocodilians will become secondary to their utilization.

None of the above is surprising to me. But the personality battles which have raged and finally led to the resignation of Professor Wayne King as Chairman of the CSG are surprising. The battles did not lead directly to Professor King's stepping down, but they did contribute to that decision by adding a lot of needless hassle at a time when he was looking to lighten an already heavy work load. I regret this, but am heartened by the fact that he has agreed to serve as the Deputy Chairman of the CSG. I know of no other individual anywhere who has the breadth and scope of knowledge about crocodilians and the policies which surrounds them.

A new Chairman has the privilege of making changes and changes there will be. Here are some that I am THINKING about and would like to share with you. Please let me have your reactions to them. You can be sure that anything you say will be held against you!

1. Present CSG membership will remain essentially as is, until the next General Assembly of IUCN, in 1990.
2. The Steering Committee will remain essentially the same until then also.
3. After the General Assembly of IUCN, the new

Steering Committee will consist of a number of CSG Vice-Chairmen chosen from the regions, TRAFFIC, trade, etc., plus the Chairman and Deputy Chairman of CSG and a number of ex-officio members.

4. **DECENTRALIZATION AND DELEGATION WILL BE THE THEME.** Vice-Chairmen will not only have their titles but they will be delegated responsibilities covering their areas. The important contact point for Members and Correspondents of the CSG will in future be them. There will be no requirement for 'paper' Vice Chairmen! And there will be none.
5. It is not my intention to carry the very heavy and increasing work of the CSG by myself and having Vice-Chairmen, Members and Correspondents sitting on the sidelines criticizing me. I intend the opposite to be the case! They'll be delegated responsibility and be expected to do the work. The Chairman will criticize if need be! Naturally - very gently!!
6. This leads me to the next important point that is CSG membership. At present we have Members and Correspondents. CSG has become so important and popular that almost everyone concerned with crocodilians wishes to become a Member. Their interests are diverse, ranging from research scientists to field naturalist, from tanner to student. They are interested in some aspect of crocodilian conservation or management or sustained yield utilization or all three. We need many kinds of individuals if our conservation efforts on behalf of the crocodilians are to be successful.

Usually professional Clubs, Institutions, Societies, etc., have a number of membership categories such as: Fellow, Member, Associate Member, Corresponding Member, Correspondent, Honorary Member, etc. Which categories should there be in the presently much expanded CSG? The present categories no longer meet its diverse needs. I need your input and thoughts on the matter.

My own thinking, which is by no means firm, is that we should now have three categories: Member, Associate Member and Correspondent and that there should be a number limit for each category; perhaps up to 35 Members (from which the

Vice-Chairmen would be chosen), up to 35 Associate Members and up to 50 Correspondents.

Members would be chosen from among those individuals who contribute actively to the Functions of the CSG as laid out in the "Functions of Specialist Groups" section of the SSC 'Guidelines for Specialist Group Chairmen.'

Associate Members would also be chosen from those individuals and from those who are not as active as the Members in the sense of contributing to the Functions of the CSG, even though they may be better conservationists, better croc farmers, better scientists, etc. They too would be required to be outstanding individuals in their fields and who are genuinely concerned with the conservation, management and sustained yield management of the crocodile resource.

The Correspondent group would consist of those conservationists and individuals who CSG would also like to honor and have association with.

7. The major onus for proposing to me, individuals in their area, for Membership, Associate Membership and Correspondent would lie with the Vice-Chairmen and hence the Steering Committee. The Committee will make their recommendations (with the agreed number constraints) to the Chairman of CSG who in turn will make his recommendations to the Chairman of the Species Survival Commission. Pay particular attention to the section "Choosing Members" in the SSC 'Guidelines' statement.
8. The next choice of Member, Associate Member and Correspondents would be made largely at the Steering Committee meeting being held prior to the CSG meeting in Gainesville in April 1990. I would strongly advise present Members and Correspondents to start thinking now about this important matter, and for suggested names with supporting evidence to be sent to the Steering Committee Members covering your area, well in advance of April 1990. **DO NOT SEND THE NAMES AND MATERIAL TO ME!!**
9. Note these thoughts are not set in stone and can be amended. Respond -- you have opinions, so let me hear from you!

Cheers, and let's enjoy our voluntary efforts on crocodilian conservation within CSG. Success will depend on your cooperation. -- *Emeritus Professor Harry Messel, Chairman.*

## CSG MEMBERSHIP

From time to time, people ask how they can become a member of the Crocodile Specialist Group. Lists of CSG Members and CSG Correspondents were published in the last issue of the NEWSLETTER (Volume 8, January-March 1989). As a result of that listing, some people wrote in or telephoned to ask why they were not included in one or the other list. Some who had maintained contact with the Group over a long period of time simply assumed that they were either Members or Correspondents. Others mistakenly believed that they had belonged to the Group in the past and should have been included on the list. In fact, no one was overlooked. The published lists of Members and Correspondents were complete.

Members are selected and appointed in accordance with the following guidelines issued by the Chairman of the IUCN Species Survival Commission (presented in full as amended at the 11 April 1989 meeting of the SSC Steering Committee):

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### 'GUIDELINES FOR SPECIALIST GROUP CHAIRMEN'

You have been chosen as Chairman of your Specialist Group of the Species Survival Commission (SSC) because of your expertise and commitment to conservation and the need to organize an effective conservation effort on behalf of the species with which you are concerned.

To provide continuity and coordination between Specialist Groups certain policies have been adopted. The following Guidelines explain what is expected of Specialist Group Chairmen and members. The Guidelines also provide suggestions which will help Groups become and remain an effective force in species conservation.

#### FUNCTIONS OF SPECIALIST GROUPS

Groups are established to provide advice

and data to the SSC, and through it to IUCN. The main functions of each group should be:

1) to provide leadership for the conservation of the genetic diversity of the threatened taxa within your brief;

2) to determine and review on a continuing basis the status and needs of these taxa, and to promote the implementation of necessary research and management measures;

3) to make these known through published books, scientific and popular articles, films, newsletters, symposia and meeting proceedings;

4) to promote the wise management and sustainable utilisation of all taxa within your brief (especially non-threatened species); and

5) to ensure the conservation of the taxa through the development and implementation of conservation strategies and specific projects.

The SSC, other elements of IUCN, WWF, and many other organizations may help to provide some of the resources for making these things possible. Each Group is required to prepare an Action Plan which is revised on a regular basis. These are then amalgamated and become part of the various SSC Regional Species Conservation Strategies, which, in turn, are used to develop the overall IUCN Programme.

Following policy development, Groups are encouraged to develop proposals and seek funding for projects with real conservation potential. The Executive Office can provide advice regarding funding strategies.

Periodically Group Chairmen will be asked to review project proposals, reports, questions, and decisions bearing upon the group's area of expertise. It is vital that these be responded to promptly, since the entire review process depends on it.

One very important function of the Specialist Group is to provide information and data on the conservation status of species. Chairmen are requested to prepare draft species status records, review status records periodically, and update information on the status of taxa. Again, rapid communication is requested.

Chairmen are welcomed and encouraged to promulgate adopted IUCN policy, and to represent their colleagues in the Specialist Group. Chairmen must not speak in an ad hoc manner for IUCN or SSC, nor to appear to be setting overall policy. Before a particular position can become IUCN policy it must be approved both by the SSC and IUCN Council.

## RESPONSIBILITIES OF CHAIRMEN

The duty of the Chairman of a Specialist Group is to organize and coordinate his or her Group. Chairmen are expected to:

1. gather and disburse information of importance to the conservation of the taxa covered by their Group, in such a way as to initiate, influence and thereby ensure conservation results;

2. establish priorities and direct the impact of their Group toward the highest priorities;

3. attend SSC meetings whenever possible; when impossible it is important to try to ensure that their Group is represented by at least one member at each SSC meeting;

4. provide a written report on the Group's activities at the end of each IUCN triennium, suitable for distribution by SSC, and to present a brief oral report when present at an SSC meeting; and

5. communicate with Group members and with the SSC Chairman and Executive Office as often as is necessary to fulfill the Group's objectives. This includes providing information to the Executive Office on name and address changes among the Group membership, so that the computer file at Gland can be kept up-to-date.

Group Chairmen are asked to serve at the discretion of the Chairman of the Commission and will normally be expected to hold office until the next General Assembly. At the General Assembly (held every three years), all the Commissions (including Specialist Groups) are dissolved under IUCN Statutes (Article VIII Para 2 and accompanying Regulations). Renewed service of Group Chairmen and Deputy Chairman is again at the discretion of the SSC Chairman. Normally, active Chairmen are asked to continue for an additional three years. If you become too busy to carry out the duties of a Chairman or a member, you are asked to inform the Commission Chairman. This assures continuity in Group activities and allows someone else to be appointed to attend to the Group's affairs. Chairmen are asked to observe this principle strictly. The SSC Chairman may in some cases appoint one or more Deputy Chairmen to assist the Group Chairman and to act on his behalf when requested.

## CHOOSING MEMBERS

Group Chairmen are asked to nominate appropriate members for their Groups. They will first approach their potential nominees as to their willingness to serve as members and to have their names put forward for approval by the SSC Chairman. The SSC Chairman then reviews the nominations and, if he approves their appointment as members of your Group, he will in due course issue a formal invitation. He will on occasion add others of his own choice. Nominees may serve the Group in the interim. Members' terms of service are the same as the Chairman's, between General Assemblies. You can request that new members be appointed at any time. Inactive members may be asked to step down by the SSC Chairman.

Members should be selected for their expertise, their concern for conservation and their responsiveness. Do not look solely to professional scientists for members, since qualified amateurs or other experts frequently make excellent members. They should be aware that some commitment of time will be expected of them.

The size of a Specialist Group should suit the subject and your plan of operation. Groups vary in size from 7 to 200 members. Size should be based in part on the Chairman's ability to communicate with the SSC and the membership on a regular basis. The Chairman is free to appoint any Group officers that he or she sees fit, e.g., Secretary, Executive Officer, Newsletter Editor, Action Plan Compiler, Regional Coordinators, etc. The more active a Specialist Group becomes, the more it becomes necessary to delegate responsibility in this way. The notion of the Chairman doing everything is best avoided.

You may also wish to consider categories of membership, so that a larger number of specialists may take part as correspondents without the responsibility accorded a smaller number of full members. It is most important that as many members as possible be nationals of the countries (or region) involved. The international make-up of a Group is important whether its work is organized on taxonomic, biogeographic, or interdisciplinary grounds or some mixture of these.

## RESPONSIBILITIES OF GROUP MEMBERS

The Chairman should brief each member as to relevant IUCN and SSC policies. Members are encouraged to promote the conservation of

the taxa concerned but should not speak on behalf of the Group or the SSC or the IUCN without prior consultation with the Chairman. On the other hand, a chairman may occasionally wish to ask a member to speak on behalf of the Group. All relevant correspondence should be photocopied to the Chairman, who may also wish to advise the SSC Chairman and Executive Officer. Members are expected to provide advice and help to the Chairman in carrying out his responsibilities.

#### COMMUNICATIONS

The Chairman may wish to adopt a letterhead with a logo symbolizing the Group's area of interest. The connection with SSC and IUCN should be prominently displayed using the approved IUCN (1986) symbol . . . A draft of the proposed logo and letterhead should be submitted to the SSC Chairman and Executive Office for approval before printing. All members should hear from their Group Chairman with some frequency - if not by personal letters, then perhaps through an internal newsletter issued at intervals appropriate to the pace of developments. The newsletter should be circulated to the Commission Chairman, the Steering Committee Members (addresses will be made available), the Editor of *Species*, and ten copies for the Executive Office. In addition, Group Chairmen are encouraged to maintain regular contact with other agencies, conservation groups and potential funding sources by including them on the newsletter mailing list. Newsletters are especially useful to hand out during travels in regions of concern. As an aid in getting started, the Executive Office at Gland will reproduce and mail the first issue of any new Group's newsletter. The SSC newsletter, *Species* is provided gratis to all members of Groups.

The Chairman should keep permanent files of Group correspondence. Formal letters directed to persons outside the Group should be copied to the SSC Chairman and Executive Office.

It is important that Chairmen communicate in some manner with their members from time to time, to keep them informed and to solicit their views and information. If members feel neglected, they may cease to respond. Communications sent out by Chairmen, whether letters, bulletins, research publications or

periodic bibliographies on their subject, stimulate the return of valuable leads and information.

Similarly, it is vital that the Group Chairmen and members appreciate their important additional role as the world-wide eyes and ears of the organization. Any significant new developments in areas of interest to IUCN should be promptly reported to SSC.

#### MEETINGS

Chairmen should try to attend SSC meetings as often as possible. Only the Group Chairmen are automatically notified of SSC meetings. Specialist Group members are only notified if the meeting takes place in the continent or region in which they live. Therefore Chairmen are responsible for circulating such information to Group members. Minutes of the SSC meetings are only sent to Chairman of Specialist Groups and individuals who attended the meeting.

Periodic (annually, biannual, regional, etc.) meetings of Specialist Groups are encouraged. Chairmen are encouraged, when travelling in the regions, to meet whenever possible with national and regional contingents of their group membership.

By attaching Group meetings to other international assemblies such as SSC meetings, congresses or symposia, it is often possible to gather enough representatives for a useful meeting. Before full or partial Group meetings take place, the SSC Chairman and Executive Officer should be notified and invited to attend; in any case a report or minutes of the meeting should be sent to them. In spite of the difficulties, all avenues should be explored for holding a full Group meeting at least once every three years, since such gatherings are usually extremely productive.

Whenever possible, such formal meetings should have defined objectives and outputs such as written scientific reports on species conservation status and ecological problems, which should be published as the proceedings of the meeting. They should be open to all interested persons, though when formal Group business is being discussed, the meeting may be closed to non-members. Meetings should also aim to produce and/or review Action Plans which define the priorities and needs for conservation actions.

Minutes are to be recorded for all



group/subgroup meetings. Copies are to be provided to the Commission Chairman and Executive Office.

#### FUNDING

There are expenses involved in being a Group Chairman. Given the size of the SSC and the number of Groups, it is impossible to fund each Group. Chairmen are encouraged to seek institutional support for their IUCN responsibilities. Normally this would include secretarial services, telephone, photocopying and postage. Chairmen, lacking institutional bases, are encouraged to seek support from a friendly NGO, agency or private patron. Even a relatively small but reliable contribution can make regular operations possible.

Active fund raising is encouraged for conservation activities and Group office support; however, Group Chairmen as volunteers, should not seek funding for their own salaries as Group Chairman.

In order to attend meetings, Chairmen are expected to raise their own travel funds. In some countries (such as the USA), out-of-pocket expenses may be tax-deductible if the conservation work thus undertaken bears upon one's profession. Occasionally, discretionary funds might be available from SSC to attend a given meeting should one's attendance be crucial and should no other source exist. New Specialist Groups may request modest funds, permitting one-time financial assistance to establish their operating procedures. Thereafter, Groups should aim to become self-sustaining. -- *Grenville Lucas, Chairman, Species Survival Commission.*

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As allowed by the above Guidelines, the CSG currently has two categories of membership: full voting Members and non-voting Correspondents. At one time there was a third category, Consultants, which was eliminated by the Species Survival Commission five years ago.

In keeping with the Guidelines, and with the IUCN Statutes, membership tenure only extends to the next triennial IUCN General Assembly. At the Assembly, all Commissions and Specialist Groups are dissolved. All members of the CSG Specialist Group are reminded of this by letter

from the Chairman prior to each General Assembly. This dissolution allows easy revision of the membership. Following the Assembly, new members are appointed, some previous members are reappointed and inactive ones are dropped.

Every current CSG Member and Correspondent has received a letter of invitation from the SSC Chairman. Occasionally, after the membership list has been approved, other administrative responsibilities delay the letters of invitation from the SSC Chairman. When that happens, pending the mailing of the formal letters from the SSC Chairman, the CSG Chairman may send interim letters of invitation. If you have not received a letter of invitation or an interim letter, you are not a CSG Member or Correspondent. That does not mean your continued interaction with the CSG is not welcome, because it is. Interaction is one of the main criteria used in selecting members. Lots of people want the recognition of belonging to SSC Specialist Groups, but never do anything to warrant the appointment. The Group cannot function unless its members are activists.

Another consideration is location. Too many qualified people are from northern developed nations. They all cannot be members. To maintain geographic balance and avoid a north-south bias, priority is given to selecting Members and Correspondents from crocodilian producing nations. This policy is not unique to the CSG. It is required by the 'Guidelines.'

Current membership of the CSG stands at 78 Members and 28 Correspondents. However, regular contact is maintained with three times that number of interested people. The NEWSLETTER alone is mailed to nearly 400 people.

I hope this unravels some of the mystery that surrounds membership in the CSG. Remember, the Chairman, Emeritus Professor Messel, has stated that the composition of the Group will change next year, so if you want to be a member, keep active, and please keep in touch.

## SUPPORTERS

We wish to acknowledge the following contributors to the program of the CSG in 1988.

Bill McLean, Moultrie, Georgia, U.S.A., supported the CSG NEWSLETTER.



John M. Rafferty, Palm City, Florida, U.S.A., supported operation of the CSG chairman's office and conservation program.

## AREA REPORTS

### AFRICA

#### Ethiopia:

Ms. Almaz Beyero, of the Arba-Minch Crocodile Farm, wrote to introduce herself and to ask for literature on crocodile ecology and farming. Ms. Beyero states that the Arba-minch farm is,

...more or less covered with trees, bushes and mainly wild animals such as buffalos, warthogs, wild ass, zebra, greater kudu, lesser kudu, gazelles and other lives in the water bodies such as hippopotamus, of course the crocodiles, and many different kinds of birds. Really, I can say it is gifted by nature...I know there are millions and millions of crocodiles in our surrounding lakes. After a long period of time their number will decrease. In our farm we also put a few crocodiles as a breeding stock. We hope in the future they may be our source of crocodile eggs instead of collecting from the shores of the lakes.

The farm is still experimental.

Operation of the Arba-Minch Crocodile Farm recently was reviewed by a mission from the Faculty of Veterinary Medicine, Addis Ababa, and the U.N. Economic Commission for Africa. The purpose of the mission was to review the technical and economic aspects of the farm operations, to identify constraints and suggest possible remedies, and to explore ways of securing technical assistance including the establishment of a data bank. The final report has not yet been completed.

#### Gambia:

Dr. Eddie Brewer, Director of Wildlife and National Parks, has asked the University of Bristol to survey The Gambia's dwarf crocodiles, *Osteolaemus tetraspis*, and then relocate them into the Abuki Nature Reserve. Mr. Mark Day and Dr. Scott Jones, Department of Zoology,

University of Bristol, are co-directors of the exercise entitled, 'The Gambian Dwarf Crocodile Rescue Project.' The proposal's abstract states the project aims,

To complete a survey of the population of the Dwarf Crocodile (*Osteolaemus tetraspis* CITES I) at the northern limit of the limited distribution of the species in West Africa. Preliminary surveys have relocated Dwarf Crocodiles in The Gambia and established forest habitat destruction and subsequent water table depletion as the source of the threat. Essential small pool habitats will be rehabilitated in the Abuko Nature Reserve and managed via a concealed irrigation system. Extant relict populations (typically 1-2 individuals) within The Gambia may be translocated to the country's only remaining (presently sustainable) forest habitat at Abuko. Population surveys will be conducted in The Gambia and Southern Senegal, and compared with populations of predicted greater density in neighboring Guinea-Bissau, Guinea and Sierra Leone. Concurrent with this work, extensive surveys of the region's amphibian, reptile and small mammal fauna will be conducted. Rehabilitated pools in the Reserve will be used to found the first ecological study of *Osteolaemus tetraspis* incorporating its reproductive and feeding ecology which are as yet virtually unknown. Full use will be made of Bristol University's links with the Gambian Education Department to further inform the thousands of school-children and teachers visiting the Reserve and its Education Centre annually as to the nature of wildlife conservation.

In addition, the project objectives are stated as:

- i) To census the forest areas of The Gambia and Southern Senegal in order to obtain an estimate of the population of the Dwarf Crocodile (*Osteolaemus tetraspis*).
- ii) Rehabilitation of existing and construction of small forest pools *de novo* within the protection of the Abuko Nature Reserve, to be maintained by an artificial irrigation system incorporating over 600m of concealed piping.
- iii) Translocation of isolated Dwarf Crocodiles to the safety of the Reserve.

iv) Systematic surveys of amphibia, reptile and small mammal fauna within the Abuko Reserve which is at present unknown. There is great scope for potentially increasing the survey area, but this is time-dependent.

Justification for the project is described as,

Due to loss of forest cover there has been a subsequent lowering of the water table which has resulted in the permanent drying out of some of the seasonal pools critical to the Dwarf Crocodile. The drastic nature of the artificial pool irrigation is forced by this presently irreversible water table depletion.

The project seeks funding from the International Council for Bird Preservation and from the Fauna and Flora Preservation Society.

Dawn Stairin, who has been studying primates in The Gambia, reports that a lot of earth will have to be moved in order to provide water from a deep bore well to the forest pools that contain dwarf crocodiles in the Abuko Nature Reserve; all the pools will have to be connected by pipes, ditches, and canals.

The project proposal contains several misleading statements, e.g., "...it is apparently technically very difficult to distinguish between the prepared skins of *O. tetraspis* and *Crocodylus niloticus*...."

Clearly, a survey of the crocodiles of The Gambia is welcomed. However, if as stated, the Abuko Reserve populations of dwarf crocodiles are among the last in Gambia, before the work is initiated, it would be interesting to know whether or not the Abuko forest pools can support the artificially increased numbers of dwarf crocodiles. The existing pools may already be at carrying capacity, and newly constructed pools do not instantly have a vertebrate and invertebrate fauna, upon which the crocodiles can feed. In addition, the authors of the proposal seem unaware of the scientific research that has been conducted on the ecology of the dwarf crocodile in central and west Africa, e.g., CSG member Dr. Ekkehard Waitkuwait's work in the Ivory Coast.

## **Liberia:**

Dr. Christopher Kofron, Fullbright Professor at Cuttington University College, Monrovia, is undertaking a study of the slender-

snouted and dwarf crocodiles in Liberia. He reports,

I surveyed 16 km on the St. Paul River, one of the larger rivers, and didn't see one crocodile. The wildlife (including crocodiles) have been devastated by hunting, fish nets and deforestation.

A survey of the Nile crocodiles in the mangrove swamps near Monrovia has already been initiated, and a survey of the crocodiles of Sapo National Park is planned.

## **Nigeria:**

Daniel C. Alum, Federal Department of Forestry, Ministry of Agriculture, Water Resources and Rural Development, Enugu, writes that he is a wildlife officer assigned for the past seven years to the crocodile multiplication project in Nigeria. He seeks contact with people who might help him overcome the "non-reproductivity" of farm crocodiles. He has taken steps to improve the nutrition by switching from a diet consisting solely of donkey meat to one in which donkey and fish are alternated.

## **South Africa:**

Dr. A. Cloete, Senior Lecturer at Pretoria University, has been corresponding with a number of CSG members to gather information on possible methods of deterring crocodile attacks. Although details are not available at this time on what type of deterrent is being developed, according to Tony Pooley the research Dr. Cloete has been conducting is moving out of the laboratory and into fieldtests with the Nile crocodiles of Kruger National Park. If it works, wildlife officials in many crocodile producing nations will breath a sigh of relief. In the event it does not work, we hope someone tells us where to send the flowers.

## **ASIA**

### **Pakistan:**

Khan Muhammad Khan, Conservator of Wildlife, Sind Wildlife Management Board, reports that the Government of Sind is developing a program to conserve its crocodilians. One of the first steps was the declaration of a 50,000 acre crocodile and

gharial sanctuary in an area that includes about 30 lakes and swamps suitable for habitat. As a second step in the program, the government hopes to breed crocodiles and gharials in captivity and re-introduce them into localities where they formerly occurred.

## Philippines:

Supremo Tito L. Osorio, Head of Information and Training at the RP-Japan Crocodile Farming Institute, Irawan, Puerto Princessa City 5300, Palawan, Philippines, asks individuals interested in receiving the CFI NEWS to contact him. The CFI NEWS is the official publication of the Institute. People on the CFI mailing list will also receive copies of other reports and research papers published by the institute.

## Thailand:

The following report is reprinted with permission from TRAFFIC(U.S.A.), Volume 9, No. 1, January 1989, p 11:

In August 1988, TRAFFIC(Japan) concluded a successful investigation that identified a complex smuggling and laundering route for thousands of South American caiman (*Caiman crocodilus*) skins into Asian markets. TRAFFIC(Japan) believes that the skins were part of a large consignment of skins that was secretly loaded onto Asian-bound ships off the coast of Uruguay at the end of 1987.

This eight-month investigation began with a routine examination of Japanese Customs statistics that revealed a dramatic increase of caiman skin imports to Japan from Thailand. The 20-fold increase was greater than all imports received over the last 25 years from Thailand -- over 46 metric tons of skins imported, representing at least 120,000 animals. Informers helped TRAFFIC piece together the route of the skins through Brazil, Paraguay, Uruguay, South Korea, Taiwan, Singapore, and Thailand. Other South American countries involuntarily drawn into the smuggling route included Chile, Colombia, and Venezuela.

TRAFFIC(Japan) admonished both Thailand and Japan for their indirect compliance with the smugglers through

their inaction or acceptance, without verification, of questionable documents and information. The TRAFFIC(Japan) report summarizing the investigation said that "it is difficult to accept that the parties in these transactions were innocent of the fact that the skins represented contraband stock under CITES" and "it's a pity that Thailand, who previously had an admirable record with respect to CITES, has been used to stage such massive smuggling."

Perhaps the most far-reaching result of this investigation has been new regulations implemented by Japan for controlling the import of caiman and other CITES-listed species. Almost immediately after the conclusion of this investigation, the Japanese management authority enacted new procedures for verifying the legality and origin of certain imported species.

## AUSTRALIA/OCEANIA

### Australia:

Bill Carnell, Director of Janamba Croc Farm, Section 1547, Middle Point, Northern Territory, writes that the farm is now in production. Approximately 2,000 *Crocodylus johnsoni* and 500 *C. porosus* are being harvested each year.

Dr. John Shield, Queensland Department of Primary Industries, P.O. Box 652, Cairns, reports that Qld DPI is organizing a two day seminar from 19 to 20 July 1989 in Townsville on "Tropical Intensive Animal Production." The seminar will feature crocodiles as well as poultry, pig farming, and aquaculture.

### Solomon Islands:

From 20 July until 18 September 1989, CSG Chairman Harry Messel will be surveying the *Crocodylus porosus* populations of the Solomon Islands on behalf of that government and the CITES Secretariat. For more than a decade, several hundred medium to large *C. porosus* hides have been exported from the Solomon Islands to the international hide market each year, but no data exist on the status of the populations. The surveys will encompass the islands of Guadalcanal, the Santa Cruz Islands

(including Utupua and Vanikoro), San Cristobal, Malaita, the Russell Islands, Rendova, Vella Lavella, Choiseul, and Santa Isabel. He will be assisted in the field by Wayne King and local hunters. CSG Correspondent Yoichi Takehara of Horuichi Trading Co. in Japan contributed significantly to the survey by visiting Honiara in late May where he introduced Prof. Messel to government officials and local buyers.

## **CENTRAL AMERICA** **AND CARIBBEAN**

### **Belize:**

In an effort to allow depleted wild populations to recover, the government of Belize has prohibited crocodile hunting for seven years. Today, with reports of nuisance crocodiles increasing, the possibility of establishing a program of strictly regulated harvest is being tentatively explored. However, the government is planning to undertake a survey of the wild populations before the hunting prohibition is relaxed. Once data are available on the numbers and distribution of *Crocodylus acutus* and *Crocodylus moreletii* in Belize, development of a program for their management and sustained utilization will be possible.

### **Costa Rica:**

John Allsteadt and Chris Vaughan, researchers with the Master's Program in Wildlife Management, National University of Costa Rica, are planning a survey of the crocodilians of Costa Rica; *Caiman crocodilus* and *Crocodylus acutus*. In addition, they are conducting research on the management potential for the caimans of Caño Negro, a 10,000 hectare national wildlife refuge in the northcentral region. The refuge encompasses swamp, pasture, and tropical moist forest. Research on the caimans in the refuge began in 1986 and continues today.

Allsteadt and Vaughan state that in 1988, over 400 subsistence farming families living in the refuge would benefit from village controlled caiman exploitation, and that the caiman population was,

...recuperating from severe hunting which terminated in 1980. This year's survey of the major water ways in the entire refuge

produced 2,118 individuals. In addition to population size, we are collecting data on caiman food habits, seasonal movement, habitat preferences, and reproduction. The probable low reproductive success of caiman in CN may necessitate captive propagation. Caiman nesting is affected by cattle ranching, predation, flooding, and river bank deforestation.

We can only hope they are successful in finding continued support for their much needed work.

### **Guatemala:**

Oscar F. Lara, in the Master's Program in Wildlife Management, National University of Costa Rica, is planning to undertake a survey of *Crocodylus moreletii* in all of El Peten. Fieldwork should commence in mid-1989 and continue through mid-1990. He hopes to estimate the crocodile's population size and structure, its reproductive ecology, and to provide data on critical habitat and hunting pressure.

### **Honduras:**

A joint CITES-Direccion General de Recursos Naturales Renovables (RENARE) survey of the crocodilians of Honduras is being conducted by Mario Espinal, CSG member and RENARE biologist, and Carlos Cerrato, Universidad Nacional Autonoma de Honduras. The survey began in early February when Prof. Wayne King and Phil Hall briefly joined Mario and Carlos in Palacio in eastern Honduras. Carlos is surveying the central northern drainages, while Mario is surveying the rivers, lagoons, and wetlands of southern, western, and extreme eastern Honduras. This is the first comprehensive survey of the *Crocodylus acutus* and *Caiman crocodilus* populations in that nation since Duke Klein's 1977 surveys of the lagoons in La Mosquitia, eastern Honduras. Comparison of Klein's results with those from the present survey may reveal population trends that will be useful for determining conservation priorities and setting export quotas.

Reporting on progress made through the end of March, Mario indicates that unusually cold weather had kept the crocodilians inactive and made surveying difficult.

The cold weather also seems to have delayed nesting of *Crocodylus acutus* on the crocodile farm, El Tumbador, on the north coast near Trujillo. In past years, nesting started in mid-March and finished in April; however, this year nesting did not start until May. El Tumbador is into its third breeding season. The farm's owner, Adolfo Midence Soto, has applied to the Natural Resources Secretariat to have El Tumbador accepted as the first farm registered with CITES as a captive-breeding facility for *C. acutus*.

## **EUROPE**

### **Portugal:**

José Cirilo, General Manager of Camping Valverde, Rotasol, reports that their company is developing a commercial Nile crocodile farm in Algarve, the southern-most province of Portugal. Several CSG members have been contacted to advise on the design and implementation of the farm.

## **NORTH AMERICA**

### **Mexico:**

The Grupo Rodarte Corporativo, S.A., is establishing a farm, Cocodrilos de Sinaloa, for *Crocodylus moreletii* northeast of Culicán, Sinaloa. The 2.5 hectare site is within 20 km. of the Pacific Ocean. The completed facility will consist of three rearing pens measuring 67 m. x 83 m. for juveniles 60 to 90 cm. in length; three pens 67 m. x 120 m. for 1.0 m to 1.4 m. subadults, and three pens 67 m. x 120 m. for adult breeders 1.5 m. or greater in length. Each pen has an irregular-shaped central lagoon surrounded by land. Water depth in the breeding lagoons is 1.5 m. The breeding pens will be stocked with 70 adults at a ratio of 4 females for each male. Four controlled environment and incubator buildings and a food preparation building will also be built. In addition, a 32 m. x 32 m. pond for isolating sick animals is planned.

The farm will be stocked with 100 one-meter long *Crocodylus moreletii* from the farm in Chacahua, Oaxaca. Application also has been made to the federal wildlife authorities for permission to collect specimens, particularly reproductive adults, from the wild (not from national parks and refuges) in Tabasco.

Plans call for making 15% of the farm produced juveniles available for release back into the wild. This provision is extremely troubling, even though it clearly was intended to serve conservation. What makes it so worrisome is the Sinaloa farm is located well outside the geographic range of *Crocodylus moreletii*, an Atlantic coast species. If farm crocodiles are released, or escape from the farm, on the Pacific coast, feral populations of Morelet's crocodile may be established within the range of the northern-most Pacific populations of *Crocodylus acutus*. It would be far more appropriate to farm *C. acutus* in Sinaloa.

### **United States:**

In the North American Regional Reports in the 1987 CSG NEWSLETTER, volume 6, page 10, Dennis David of the Florida Game and Fresh Water Fish Commission (GFC) described new regulations proposed by the GFC that would require alligator farmers participating in Florida's wild hatchling collection program to mark their wild-caught hatchlings by clipping the dorsal crest scales on their tails. In that issue, the CSG chairman criticized the proposed regulations in the belief that removing the scales would destroy the value of any hornback hides flayed from those alligators. Dennis and Michael Jennings of the GFC proved that worry was without foundation. They compared a variety of marking methods and demonstrated the proposed scale clipping was close enough to the tip of the tail that it would not damage hornback hides. [I was chairman at the time the scale-clipping regulation was proposed, and clearly, I was wrong in criticizing that proposal. This is the type of professional disagreement I enjoy losing for my being wrong means the farmers do not lose. Nevertheless, I owe an apology to the GFC, and to Dennis in particular. -- F. Wayne King.]

Dennis David, CSG member and Program Coordinator for the Florida Game and Fresh Water Fish Commission's Statewide Alligator Program, has proposed that the CSG undertake the development of a model crocodilian resource management plan. In explaining his idea, Dennis says,

A comprehensive plan could serve as a source document for developing programs to draw on for direction and source material

for the establishment of crocodilian management programs. A model plan developed in a "cookbook" approach would familiarize the reader with the complex issues that must be considered in developing a crocodilian resource management program. Such an approach would save manager's from reinventing the wheel by outlining and presenting the concepts, justification and practical applications used in existing successful programs...The plan should address three general areas: 1) biological assessment and program objectives; 2) personnel and funding needs; 3) legislation, regulations and operational procedures.

Biological assessments should outline recommended procedures to evaluate available habitat, population levels and harvest potential, as well as a review of the discussion of the various harvest strategies and options available. Merits or consequences of various harvest strategies should include an account of the historical use, social, cultural and political factors which might influence identification of the "optimal" harvest strategy...The development of a model crocodilian resource management plan would require contributions from a number of individuals involved in a variety of programs throughout the world.

Development of this model plan was endorsed by the CSG Steering Committee, which then asked Dennis to chair a committee that would undertake the task of drafting the document. Dennis will provide further information on the project in the next issue of the NEWSLETTER.

On 10 May 1989, THE GAINESVILLE SUN newspaper reported that licensed nuisance alligator trapper Columbus White caught the largest alligator the Florida Game and Fresh Water Fish Commission (GFC) ever recorded from the state -- there may have been larger gators caught in Florida, but this was the largest one taken since the GFC started maintaining records. Because it posed a potential threat to customers at a local fish camp, the 13 foot 10½ inch (4.23 m) long, 1,043 pound (473 kg), male was harpooned and killed in Orange Lake on 17 April. According to the GFC, seven other

alligators over 13 feet long have been removed from Orange Lake in the last 7-years.

Less than a month later, THE GAINESVILLE SUN reported that on 3 June 1989 two alligator trappers killed a 14-foot (4.27 m) long, 714½ pound (324 kg), alligator in a tributary of the Apalachicola River in west Florida.

Dr. Lois E. ('Bets') Rasmussen, Oregon Graduate Center for Study & Research, Beaverton, is analyzing secretions of the American crocodile with gas chromatography and mass spectrometry as part of a long standing interest in chemical communication of vertebrate animals. To date most of her research has focused on mammals, but her first paper on crocodiles has just been submitted for publication.

## SOUTH AMERICA

### Argentina:

Dr. Alejandro Larriera reports that he is finishing studies on the reproduction and growth of *Caiman latirostris* in captivity, and on a comparison of diets and identification of diseases. The studies are being conducted at an experimental farm operated by the Ministry of Agriculture of the Province of Santa Fe, and at a private farm in the Province of Chaco. Dr. Larriera indicates that he has been working with crocodilians since 1984.

### Brazil:

The south central Brazilian caiman surveys of the CITES caiman project concluded in November 1988 with a preliminary report to the CITES Secretariat. However, with additional support from WWF/Traffic U.S.A., the field team continued field operations in the Amazon drainage system in northern Brazil. To date, surveys have been carried out in the northeastern states of Maranhão and Piauí, and in February 1989, the team surveyed the north central Roraima region on the Rio Branco between Venezuela and Guyana. Additional surveys were conducted in western Amazonia bordering Peru and Colombia, and regions immediately west and north of Manaus in central Amazonia.

No significant black caiman, *Melanosuchus niger*, populations were encountered and

common caiman, *Caiman crocodilus crocodilus*, populations varied from less than one animal per kilometer of river surveyed to small lake populations of forty or more individuals. In some regions where hide hunting was not a significant factor, extensive hunting by numerous gold miners for food had decimated local populations.

Team members Carlos Yamashita and George Rebelo continue to assist local conservation organizations in a number of studies involving the reproduction and nesting ecology of the Yacare caiman in the Pantanal.

In New York, the biochemical systematics studies of caiman are well underway, with the assistance of Dr. Myrna Watanabe, based on sample materials which continue to be received from the field. This phase of the work has been greatly enhanced with the development of a small molecular biology laboratory at the Central Park Zoo and a grant for research equipment from the New York Zoological Society's Madison and DeForest Grant Fund.

Several satellite projects have also emerged, based on the field sampling of caiman populations. These include a survey of blood parasites in the Brazilian caiman populations, conducted by laboratory technician Robin Moretti at the Central Park Zoo; vitamin E levels in wild caiman, conducted in collaboration with Dr. Ellen Dierenfeld, nutritionist at the New York Zoological Park Animal Health Center; and caima pathology and parasites, being conducted in collaboration with Dr. Jane Huffman at the University of East Stroudsburg, Pennsylvania.

At this time, field surveys should continue throughout 1989 and hopefully well into 1990. --  
*Peter Brazaitis, New York Zoological Society, Central Park Zoo, Carlos Yamashita, University of Sao Paulo, and George Rebelo, Instituto Nacional de Pesquisas da Amazonia.*

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Tim Moulton, Center for Study & Applied Research on the Natural Resources of Cardoso Island, and CSG member, Dr. Bill Magnusson, are undertaking a survey of the reptiles and amphibians of Cardoso Island, including the *jacare de papo* or broadsnouted caiman, *Caiman latirostris*. The island is a Sao Paulo state park largely protected by the presence of biologists conducting field studies there. It has fairly intact stands of the critically endangered Atlantic

rainforest that used to cover much of southeastern Brazil. Today, less than 5% of this biogeographically distinct forest remains in Brazil. The survey will document what species of reptiles and amphibians occur on the island. Particular attention will focus on the distribution, ecology, and behavior of *Caiman latirostris*. The study should yield data useful for the conservation of the island and its wildlife.

## French Guiana:

Oliviera Behra, CSG member from France, recently began surveying the crocodilians of French Guiana. The work is being done with the assistance of Dr. Sanite, Director of Veterinary Services in that country. Oliveira reports that,

One trip in October 1988 and another one from January to April 1989 permits me to determine with precision the current distribution of the black caiman on the river systems of French Guyana.

The local authorities have been contacted and more effective protective measures have been and will be certainly taken, like more control on the hunting in the sensible area.

During an exposition on Amphibians and Reptiles in Cayenne, we have included an educative part in the study and on the differences between the four species found there.

Oliviera goes on to say,

I would like to study the movement of the caimans in between the Kaw swamp, the river of Kaw, and the Approuage river. I've already started to mark a few animals but I need to do it on a lot more.

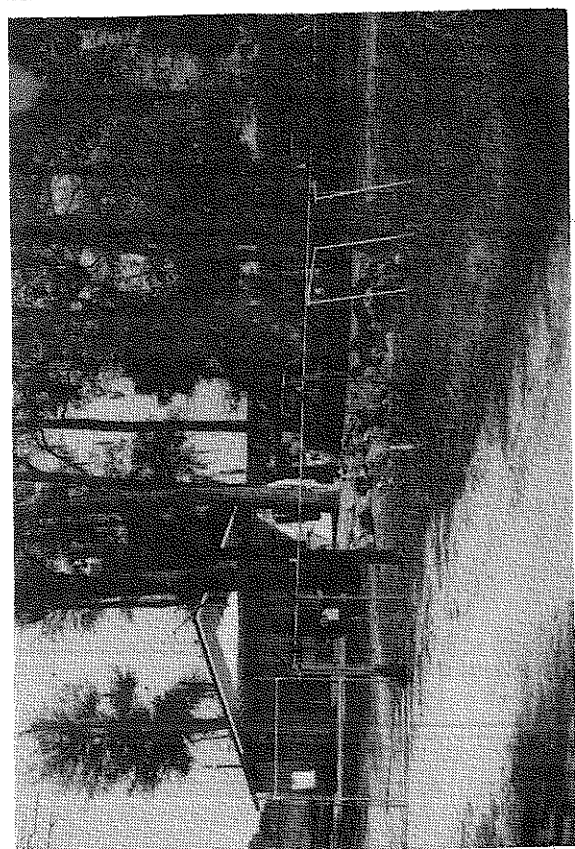
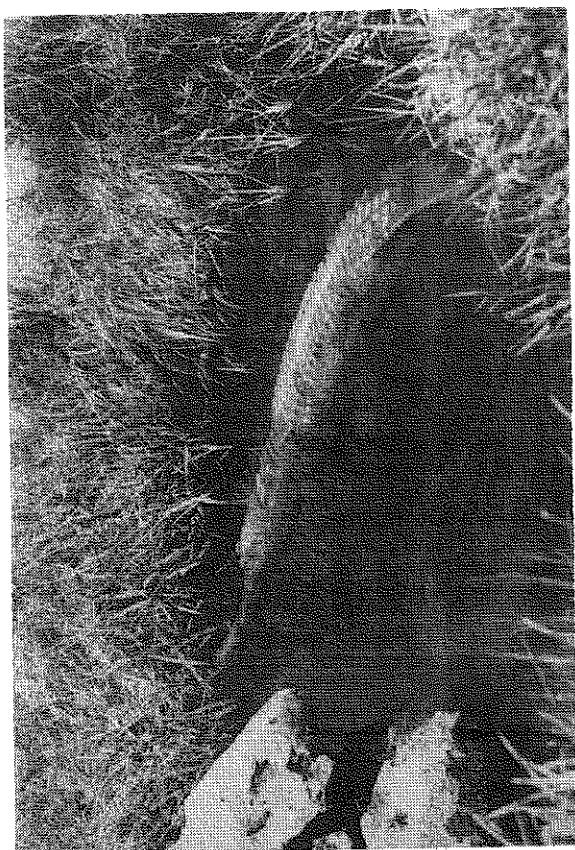
That's for the black caiman. During my night count I made very interesting observations on the specific distribution of the different species.

I found *Caiman crocodylus crocodylus* with *Melanosuchus niger* and *Paleosuchus palpebrosus* together in the same areas, but I've not found any *P. trigonatus* around.

## Guyana:

The joint CITES-Government of Guyana survey of that nation's crocodilians started in March under the direction of Dr. Stefan Gorzula,





In March, the AAZPA's Crocodilian Advisory Group visited St. Augustine Alligator Farm's Crocodilian Center near Ocala, Florida, U.S.A. Clockwise from the upper left: Food preparation building and entrance; *Tomistoma schlegelii*; *Crocodylus acutus*; and *Melanosuchus niger*. F. Wayne King photos.

CSG member from Venezuela, Phil Hall, Department of Wildlife and Range Sciences, University of Florida, U.S.A., and John Woolford, Wildlife Department, Ministry of Agriculture.

## Venezuela:

Glenda Medina-Cuervo, Project Coordinator at the Fundacion para la Defensa de la Naturaleza (FUDENA), reports that *Crocodylus intermedius* hatchlings from the Cojedes river reared in captivity at the Universidad Experimental de Los Llanos Occidentales 'Ezequiel Zamora', Guanare, have grown at an incredible speed and are ready to be reintroduced into the wild. Plans call for attaching radios to approximately 10 of the 30 to 40 animals so they can be tracked after being released into the recently declared Caño Guaritico Wildlife Refuge. *[Please keep us informed about later developments in this first release of head-started Orinoco crocodiles -- Ed.]*

## ZOOS

The Crocodilian Advisory Group (CAG) of the American Association of Zoological Parks and Aquariums (AAZPA) held its annual meeting in Florida from 9-12 March.

The agenda included,

- Policy on disposal of surplus animals - John Behler, New York Zoological Park.
- Possible AAZPA/AAFA cooperation - John Behler, NYZP, and Wayne King, Florida Museum of Natural History.
- Responses to the CAG questionnaire - William Zeigler, Miami Metrozoo.
- Identification methods - R. Andrew Odum, Houston Zoological Gardens, and James Tamarack, St. Catherine's Island.
- Studbook developments:
  - Dwarf caiman - Dale Belcher, Rio Grande Zoological Park.
  - Siamese crocodile - Mark Wise, St. Augustine Alligator Farm.
  - Cuban crocodile - Michael Davenport, National Zoological Park.
  - Morelet's crocodile - Howard Hunt, Atlanta Zoological Park.
  - Slender-snouted crocodile - William

Zeigler, Miami Metrozoo.

False gavia - William Zeigler, Miami Metrozoo.

### ■ Species updates:

Chinese alligators - John Behler, New York Zoological Park.

Black caiman

Orinoco crocodiles - William Zeigler, Miami Metrozoo, and John Behler, New York Zoological Park.

Philippines crocodiles - Rick Hudson, Fort Worth Zoo.

Gharial - Mark Wise, St. Augustine Alligator Farm.

Morelet's crocodile - Howard Hunt, Atlanta Zoological Park.

### ■ Appointment of coordinators.

■ Ocala Crocodilian Center - Mark Wise, St. Augustine Alligator Farm.

### ■ Membership reviews.

■ CAG/private breeder relationship.

■ New studbook software - R. Andrew Odum, Houston Zoological Gardens.

■ DNA fingerprinting progress report - Jeff Lang, University of North Dakota.

■ Research priorities - Jeff Lang, University of North Dakota, and Kent Vliet, University of Florida.

■ Field conservation--the CSG role - Rick Hudson, Fort Worth Zoo.

■ Chinese alligator Species Survival Plan - John Behler, New York Zoological Park.

■ 1990 meeting site.

■ International coordination of crocodile banks.

The meeting convened at the St. Augustine Alligator Farm and at Marineland, where the working sessions were held. The following day the meeting moved on to the St. Augustine Alligator Farm's new Crocodilian Center, located near Ocala, Florida. It next moved to Gator Jungle in Dover, Florida, where the group was hosted by Tracy Howell, Director of the American Alligator Farmers Association. Finally, it returned to the Crocodilian Center and St. Augustine.

In October 1988, Gladys Porter Zoo, Brownsville, Texas, USA, received two young female *Crocodylus mindorensis* from the captive breeding program operated by Prof. Angel Alcalá at Silliman University in the Philippines.

The females join two males that have been at the zoo for several years to establish a new breeding program for the species in the U.S.A. Any offspring produced from the Gladys Porter program will be returned to Silliman for release in the Philippines.

## SSC MEETING

The next meeting of the full IUCN Species Survival Commission will be held at the University of Rome in Rome, Italy, from 20 to 22 August 1989.

The provisional program includes:

- Welcome - Luigi Boltani, Dept. Animal and Human Biology, University of Rome.
- Opening of 64th Meeting of the Commission - Grenville Lucas, Chairman, Species Survival Commission.
- World Conservation Strategy for the 90's - Martin W. Holdgate, Director General IUCN - The World Conservation Union.
- Global Strategy for Conserving the World's Biodiversity - Jeff McNeely, Chief Conservation Officer, IUCN.
- SSC's Niche in Conservation - Dr. George Rabb, Deputy Chairman, SSC.
- Heritage Species Programme - Dr. Stephen R. Edwards, Executive Officer, SSC.
- Species Population Viability Analysis - Ullie Seal, Chairman, Captive Breeding Specialist Group.
- Action Planning: A Status Report - Simon Stuart, Species Programme Officer, SSC.
- Italian Conservation Initiatives - Fulco Pratesi, President, WWF/Italy.
- Mediterranean Conservation - J. Fa, Primate Specialist Group.
- Arabian Oryx in Oman - Ralph Daly, Advisor for the Conservation of the Environment, Oman.
- African Elephant Conservation - Stephen Cobb, Vice Chairman, African Elephant and Rhino Specialist Group.
- Registration of Orchid Propagation Facilities - Joyce Stewart, Deputy Chairman, Orchid Specialist Group.
- IUCN/SSC Red Data Book Programme - Gren Lucas, Chairman, SSC.
- Threatened Species Categories - Georgina

Mace, Institute of Zoology, London.

- Action Planning Workshop - Simon Stuart, Species Programme Officer, SSC.
- Review of Proposals to Amend the CITES Appendices - Dr. Roger McManus, Chairman, and Ami Brautigam, Deputy Chairman, Trade Specialist Group.
- Additional Specialist Group Reports - from various Group chairmen and representatives.

For further information on the agenda and program contact Dr. Stephen R. Edwards, Executive Officer, Species Survival Commission, IUCN, Av. du Mont Blanc, CH-1196, Gland, Switzerland, tel: (41) (22) 647181. For further information on hotel reservations and other local arrangements contact Mr. Silvio Pompamea at American Express in Rome, tel: 0039 6 72280.

## TRADE

The following prices, in U.S. dollars, have been reported to the editor (unless otherwise indicated, prices are in U.S. dollars):

*Alligator mississippiensis* in Florida, U.S.A.: 1988-1989 - fresh boneless meat from wild alligators = \$5.00 to \$7.00 per lb.; 30 Sept. 1988 - wet salted belly hides = \$43.00 to \$47.00 per linear foot (=  $\pm$  \$6.60 to \$7.20 per cm width); whole dead wild alligators = \$35.00 to \$45.00 per linear foot paid by buyers who do their own flaying and meat processing; 15 March 1989 - wet salted belly hides = \$47.00 to \$50.00 per linear foot (=  $\pm$  \$7.20 to \$7.70 per cm width).

*Alligator mississippiensis* in South Carolina, U.S.A.: 1988 - fresh meat from wild alligators = \$5.00 to \$7.00 per lb.; wet salted belly hides = \$45.00 to \$46.00 per linear foot (=  $\pm$  \$6.90 to \$7.00 per cm width).

*Caiman crocodilus crocodilus* in Venezuela: April 1989 - dry salted chalcos = an average of \$45.00 to \$55.00 for 'supers' (= 3 square feet or more); by the end of May 1989, the price for 'supers' had risen to \$75.00.

*Crocodylus johnsoni* in Queensland, Australia: 1989 - wet salted hides = \$5.21 per cm width; fresh meat wholesale = \$15.33 per kg.

*Crocodylus johnsoni* in Northern Territories, Australia: 1989 - wet salted hides = \$5.05 per cm width; fresh meat wholesale = \$20.00 per kg for whole carcasses.

*Crocodylus niloticus* in South Africa: 1988 - wet salted hides = \$5.50 per cm width; fresh meat = ± \$7.00 per kg.

*Crocodylus porosus* in Queensland, Australia: 1989 - wet salted hides = \$8.43 per cm width; fresh meat wholesale = \$15.33 per kg.

*Crocodylus porosus* in Northern Territory, Australia: 1989 - wet salted hides = \$9.50 per cm width; fresh meat wholesale = \$20.00 per kg for whole carcasses.

## NOTES

**SPORTS CAN MEAN EXTRA MONEY.--**The dictionary definition of a biological *sport* is an animal or plant that shows an unusual or extraordinary deviation from the parental type, a mutation -- in laymen's terms, a freak.

Two years ago, the hide of a unique American alligator with tiny granular scales on its flanks was discovered in a Florida, U.S.A., tannery, and white alligator hatchlings were discovered in the wilds of Louisiana. These two separate discoveries have pointed up the need for crocodilian farmers to spend more time not just on breeding their stock, but on selective breeding. These biological *sports* could become the basis of valuable new varieties of crocodilian hides that are not available from the wild.

The scales on the flanks of a normal *Alligator mississippiensis* are round or oval and arranged into irregular transverse rows. There are roughly two rows of flank scales for each row of square belly scales. By comparison, the flank scales on the 'granular alligator' are tiny and are randomly jumbled together rather than arranged into rows. The granules are less than half the size of the normal flank scales; four to six of the granules are equal to the width of one row of square belly scales. The grain of the flank granules gives the hide an appearance somewhat reminiscent of tanned elephant hide. The contrast of the regular rows of large, square belly scales and tiny, randomly patterned granules, makes this hide unusually beautiful. Unfortunately, the gator with the granular scales was killed before the scale anomaly was discovered. Had the animal lived to maturity, it

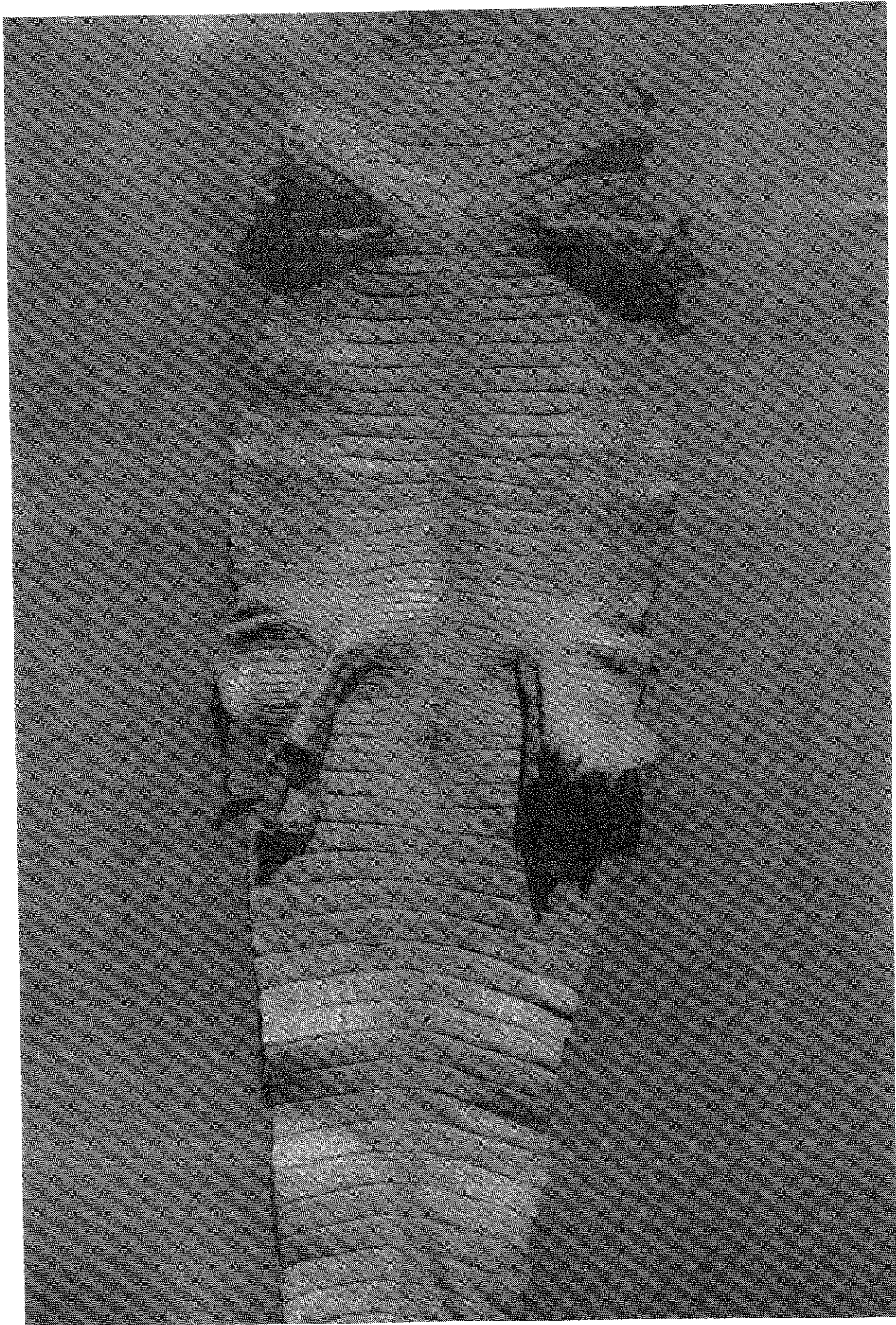
might have been possible to breed it back to its parent and produce a strain of 'granular alligators' which was unique to that one farm. With luck, similar alligators might again appear in the farm in future years.

The white alligators discovered in Louisiana, U.S.A., offer a better opportunity to develop a unique captive strain. They are not albinos since they have dark eyes. The pod of eight white and two normally colored alligators collected from one wild nest was placed in New Orleans's Audubon Park Zoo. One was subsequently transferred to the Lowry Park Zoo, Tampa, Florida. Hopefully when they mature some will be transferred to a farm where they can be bred. If a strain of white alligators could be developed by breeding these animals, there would be no chance of confusing raw hides from the white strain with dark hides from the wild. More importantly, during tanning, the dark pigment is removed from crocodilian hides to make them as pale as possible. A light-colored hide can be dyed brighter colors than a dark-colored hide can. A gray hide that is dyed white, pink, or yellow will end up a slightly muddy color. To overcome this problem many tanners finish gray hides with a thick coating of pigment. While this keeps the color bright, it fills the grooves between the scales making the hide look as though it had been covered with paint. A white raw hide should produce a whiter tanned hide. That alone would make white hides more valuable than the usual dark alligator hides.

Every crocodilian farmer should inspect his stock for *sports* that are light-colored or have an unusual grain. The grain must be handsome and symmetrical. If any are discovered, they should be reared to maturity for breeding. Just such selective breeding of *sports* has allowed mink and fox breeders to produce furs in a variety of colors that do not occur in nature. The more unusual colors have been named and copyrighted, and contribute significantly to the earnings of those particular farmers.

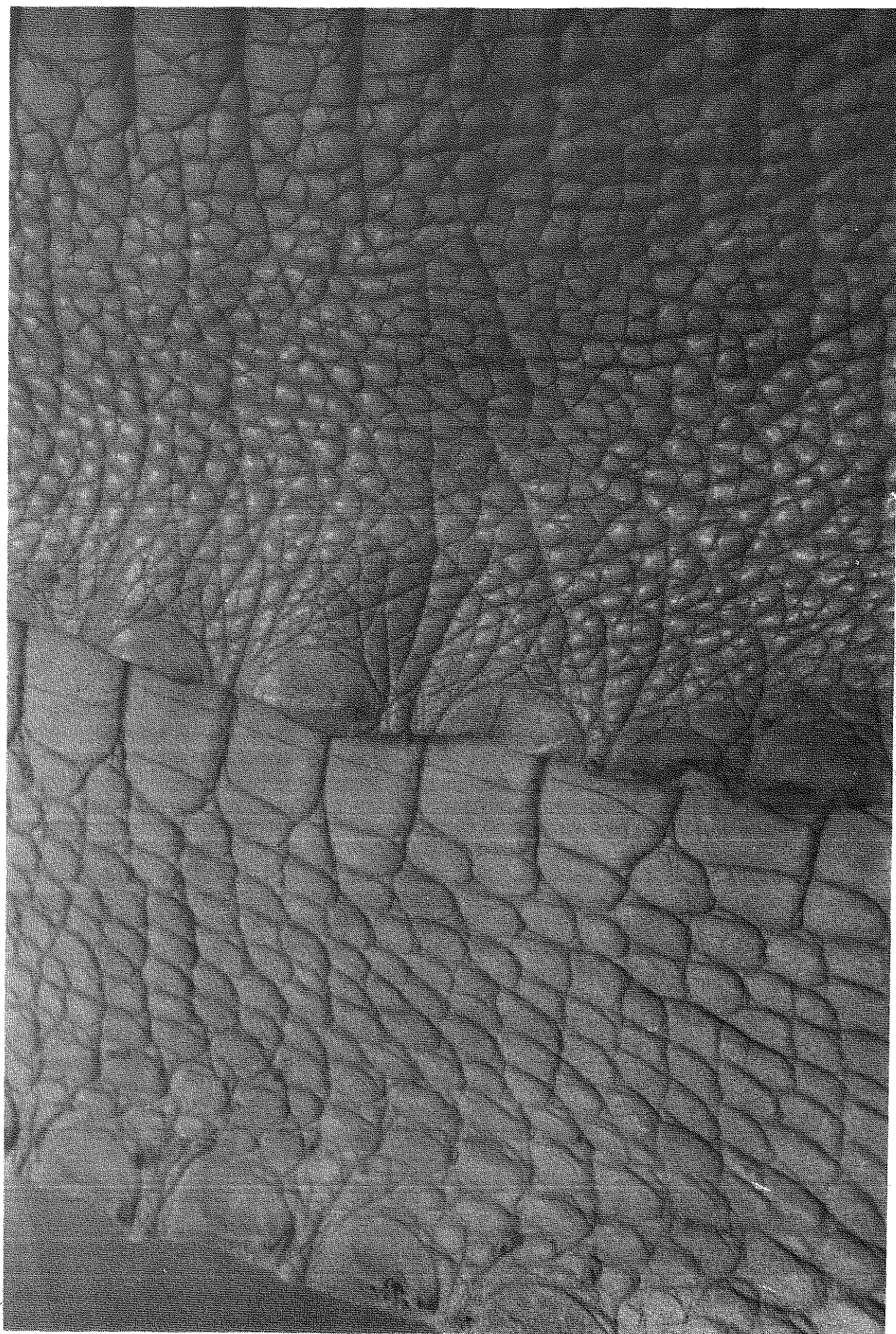
Do not limit your search for *sports* solely to animals with unusual grain or color. The Madras Crocodile Bank in Mahabalipuram, India, has mugger crocodiles that nest twice a season; the females lay one full clutch of eggs and then a month later lay a second clutch. Imagine being able to get twice the number of eggs from your breeding group. You might achieve that by selectively breeding any double-clutchers you find. Similarly, do not slaughter your fastest





Belly hide from the American alligator, *Alligator mississippiensis*, 'sport' with granular flank scales.





Close-up view of American alligator flank scales. Granular scales of the 'sport' hide (right), and the large oval scales of the typical hide (left). F. Wayne King photos.



White American alligator in the Lowry Park Zoo, Tampa, Florida, U.S.A. Tracy Howell photo.

growing juveniles and subadults. Keep them for breeders and try to develop a faster growing strain of crocodilians.

If you pass up the chance to develop a breed of crocodilian unique to your farm you will miss an unparalleled opportunity to increase your earnings. I wish to thank Jay Wilson, who first called the granular alligator hide to my attention, and Tracy Howell, who provided the photograph of the white alligator. - F. Wayne King, *Florida Museum of Natural History, Gainesville, FL 32611, USA.*

## PERSONALS

Alistair Graham is now the head of the wildlife department in Bangui, Central African Republic.

Chen Bihui, Dept. Biology, Anhui Normal University, Wuhu, People's Republic of China, is studying the integumentary glands of the Chinese alligator. She reports these glands are variable among individual alligators and are different from those in the American alligator.

Harvey Cooper-Preston, P.O. Berrimah, NT 0828, Australia, is completing a PhD study on *Crocodylus johnstoni* with the University of New England.

Sylvia Estrada, post-baccalaureate student at the University of Florida, U.S.A., assisted Prof. Wayne King from September 1988 through March 1989 by translating English language articles on crocodilian farming into Spanish. After approval by the original authors, these translations will be published as a CSG extension volume for distribution to crocodilian farmers in Central and South America.

CSG member Dr. John Hutton has left the Zimbabwe Department of National Parks and Wildlife Management to accept the position of Executive Manager of the Zimbabwe Crocodile Farmers Association of Zimbabwe.

A photograph of John Lever, CSG member from Australia, and what was reported to be a "...27-foot-long crocodile that ate more than 100 people...." appeared on the front page of the 28 February 1989 issue of the U.S.A. tabloid newspaper, WEEKLY WORLD NEWS. The photograph illustrated a headline article entitled, "Kill-crazy cult fed human sacrifices to monster crocodile!" According to the article, a group of aborigines kidnapped more than 100 people and fed them to this crocodile. When shown to Queensland and Northern Territory wildlife officials attending the CROCODILIAN CONGRESS in Tampa, Florida, U.S.A., the article elicited guffaws and derision. According to them, the animal was a nuisance *C. porosus*, approximately 15 feet long, captured by John at the request of



the Queensland National Parks and Wildlife Service. We are a bit concerned that this particular saltie might find the diet fed at the Koorana Croc Farm a bit bland after its reported former fare. Any comments John?

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Johan Marais, Assagay Safari Park and Crocodile Farm, 5 Old Main Road, Assagay, P.O. Box 73, Botha's Hill 3660, South Africa (Fax: 27 31 7771207), indicates that he is busy writing two papers on crocodilian reproduction, and editing the proceedings of a Herpetological Association of Africa symposium on husbandry. He also continues to add references to CROCLIT, the computerized database on crocodilian literature. Johan asks that readers keep him informed about new publications on crocodiles so that they can be entered into CROCLIT.

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Dr. Tirtha Maskey, CSG member from Nepal, received his PhD in the Department of Wildlife and Range Sciences, University of Florida, U.S.A., and has returned to Kathmandu and a new position as Chief Conservation Education Officer with the Department of National Parks and Wildlife Conservation. His doctoral research was on "Movement and survival of captive-reared gharial, *Gavialis gangeticus*, in the Narayani River, Nepal."

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Andres Eloy Seijas, CSG member from Venezuela, has left his post with the PROFAUNA office in the Ministry of the Environment and Renewable Natural Resources to accept a position with the Universidad Experimental de los Llanos Occidentales Ezequiel Zamora (UNELLEZ, Mesa de Cavaca, Guanare, Portuguesa, Venezuela). Andres reports he will be teaching in a new program in wildlife management and will continue his research on crocodilians. He may be more closely involved with the recovery programs for the Orinoco crocodiles.

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CSG member Ana María Trelancia has moved from Peru to São Paulo, Brazil. She hopes to get involved in local crocodilian conservation, but reports that,

In the meantime, I'm working at the

Instituto Butantan in São Paulo, learning a lot about snakes. They keep quite a lot of species in captivity and have managed to reproduce many of them. I still prefer 'legged reptiles' but it's always interesting to learn about other species.

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Phil Wilkinson, South Carolina Wildlife & Marine Resources Department, U.S.A., reports he may be headed for Queensland, Australia, to assist Laurie Taplin and Peter Bayliss capture saltwater crocodiles. He also will be adapting his floating-set and bank-set snares for use on salties.

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Congratulations to Dietrich and Hilde Jelden who proudly announced the hatching of a 'crocofant,' Nils Gerhard, at 19:05 on 11 April 1989.

## REQUESTS

Oliviera Behra, c/o Secretariat de la Faune et de la Flora, Museum National d'Histoire Naturelle, 57 rue Cuvier 75231, Paris, Cedex 05, France, would like to hear from anyone who can provide information on the specific habitats used by the two species of *Paleosuchus*. He is trying to determine if there is a difference between the habitats of the two species.

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Prof. Yehudah L. Werner, Dept. Zoology (Sturman Building), The Hebrew University of Jerusalem, 91904 Jerusalem, Israel, with the assistance of Colin McCarthy, British Museum (Natural History), London, is trying to establish the subspecific identity of the extinct "Palestinian" population of *Crocodylus niloticus*. Specimens in the BMNH, Hebrew University, and Tel-Aviv University collections already have been examined. Yehudah would like information on any specimens in other natural history collections.

## CORRECTIONS

In the 'CSG Steering Committee' report on page 6 of the January-March 1989 NEWSLETTER, the city codes inadvertently were dropped from

the telephone and fax numbers reported for Kevin Van Jaarsveldt. The correct listings are:

REPRESENTING AFRICA:

Kevin van Jaarsveldt  
Binga Products (Pvt) Ltd  
P.O. Box 2569  
Harare  
Zimbabwe

tel: (263) (4) 70-8836

fax: (263) (4) 70-6122

[Be sure the fax carries the full address and telephone number together with a request that Kevin be phoned and asked to pick up the fax.]

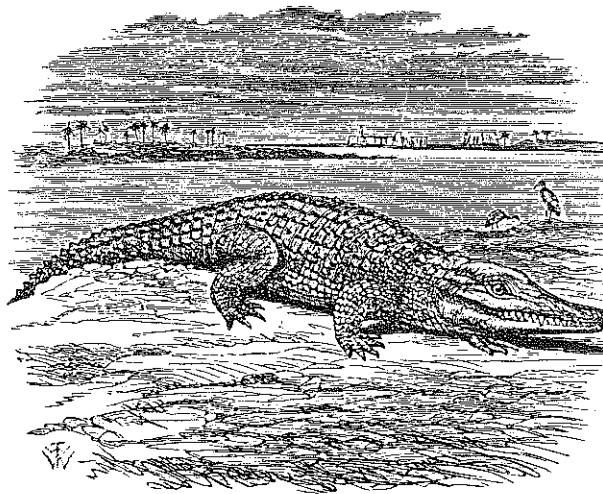
Paul E. Ouboter writes to say that he is head of the Department of Zoology at Anton de Kom Universiteit van Suriname, P.O. Box 9212, Paramaribo, and is not one of Dr. Marinus Hoogmoed's students as reported on page 11 of Volume 7, the January-December 1988 NEWSLETTER. A paper on "Habitat selection

and migration of *Caiman crocodilus crocodilus* in a swamp and swamp-forest habitat in northern Suriname" by Paul and his wife, Lurly Nanhoe, appeared in the Journal of Herpetology, 1988, 22(3):283-294.

## NOTICE

This is the last issue of the NEWSLETTER you will receive if you have not sent in the 'Tear Sheet' from the last issue or have not sent in news or photos to be included in future issues. In September, all inactive names will be purged from the mailing list. Only CSG members and correspondents, and people who regularly send in information or comments, will remain on the mailing list.

The NEWSLETTER is not free. The price you 'pay' for future issues is correspondence. If we do not hear from you at least once a year, we assume you are not interested and will drop your name from the mailing list. If you want the NEWSLETTER, you must write to us.



Nile Crocodile.